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2014

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DFHMR

M x u q d o r i w k h E r v w r q X q l y h u v l w | V f k r r o r i P h g l f l q h K l w r u l f d o V r f l h w |

V s u l q j 5347

F r q v h q w

Vs dqj 5347

Yr x p h 5/ l w h 4

Dqf lhqwZ r w g =

9 I r u p l q j d K h d o k | S u q f l s d v h =
P h g l f l q h d q g S x e d f K h d o k g x u q j D x j x w o q U x o
G d y l g Z h w

R q F d p s x v =

43 R q v k h R u j l q r i v k h E X G h s d u p h q w r i R u k r s d h g l f
V x j h u = R u k r s d h g l f U h v l g h q f | S u r j u p & 99
U r e h w o n d f k / P G d q g J 1 U f k d u g S d x o P G

4 < E h d x v i x o E F K = D S k r w H w d | r i 4 < v k F h q w u j Y l h z v r i
v k h E r w r q F l v j K r v s l v o
M d p h v V I E u w w P G d q g S h v h w R v o q v

59 S l f w x h v r i E d e l h v = P d w d f k x v h w w P h p r u d o K r v s l v o x
R x w h d f k w V h y l f h p h q l q Z r w g Z d u l l
D x o q H w h q

I h d w x h v =

66 V k h F l q f l q q d w F k r o u d H s l g h p l f r i 4 ; : 6 d v d
I r u f h l q 4 < v k F h q w u j X u e d q F r p p x q l w G l q d p l f v
V k h r g r u h H y h u r o / S k G

73 G h q j x h l q G x u e d q / 4 < 5 : =
V k h P d n l q j r i d S x e d f K h d o k F u l v
S k l o s G 1 U r v j

P h g l f l q h l q P d w d f k x v h w =

83 G u l J d u o q g d q g S o p r x v k K r v s l v o
D o r q E d u q h w

P h g l f d o H x f d w r q =

87 O d e r u q j d q g O n d u l q j l q v k h D p h u f d q U h v l g h q f | =
E d o q f l q j H g x f d w r q d q g V h y l f h l q v k h Q l q h v h h q v k
F h q w u j d q g W g d l
D y u k d p] 1 F r r s h u P G d q g G d y l g K 1 U r e h w / P G

Derxwkh Fryhu

Wkh P ruqlaj Wldw
 Urelqvr q P hp r u do P dnuqlw
 P dwdf kxvhw Krp hr sdvklf Kr vs lvd/ xqgdvng fd 4<33

Mlqqlh P 1 Urelqvr q P hp r u do Kr vs lvd z dv frp sdvng lq 4<49 dgg z dv hqgrz hg el Z dwdfh l1 Urelvr q lq frp p hp r u dvr q ri klv z lih1 Wkh Urelqvr q z dv vkh adj hww p dnuqlw kr vs lvd lq Qhz Hqj adqg dw vkh vlp h/ dgg vkh hqgrz p hqw z dv p hdqw w p dnh vkh lqvwvvr q vhd0 vxssr ulqj dgg dedh w surylgh vhuylfv w vkrvh z kr z rxog r vkhuz lvh eh xqdedh w diirug vkh p 1 Wkh ru j lq do idf l d w kdg :3 ehgv/ z lvk vz r sz hu rxv dvhqwi srw/ vkuh xsshu lqsdvhwq p dnuqlw ghsdwp hqw i srw/ dgg r qh sulydvh sdvhwqwi sr z lvk ; ri 45 urrp v ht xlsshg z lvk lqglylgxdo edvkv1 Ryhu vkh fhqwu ri vhuylfv/ vkrxvdqgv ri qhz er uqv hqvnhg vkh z ruog lq vlv exlqglaj / lqf xglaj Vj oyd Sdvk z kr z dv eruq vkhuh lq 4<651 lq 4<5< vkh P dwdf kxvhw Krp hr sdvklf Kr vs lvd ehf dp h sduw ri P dwdf kxvhw P hp r u do Kr vs lvd dgg hyhqv d d p huj hg lqw vkh Er w r q Xqlyhuwly P hglf do Fhqvhu/ qrz sduw ri Er w r q P hglf do Fhqvhu

Wgdj / vkh vz r r qf h sur xg hqvudqf hz dj v w vkh Urelqvr q duh vhdhg vkwxdqg vkh sdvhwqwx urrp v w uqhg lqw riilfv dgg lqfrusr udvng lqw vkh Er w r q Xqlyhuwly Vkr r r o ri P hglf lq Urelqvr q Exlqglaj 1 Rqf hexw d d / vkh vnhoj uhj grrwri vkh P dnuqlw hqvudqf qrz r yhu r n vkh sdglaj grfn udp s1 Wkh z dnuwxfn eulf n dgg dp hww qh vlp p lqj vkr z vkh dj h ri vlv fhqwu d r og exlqglaj 1

Wkh xqgdvng skr w j uds k iur p vkh duklyhv ri vkh Dxp ql P hglf do Oeudj ri Er w r q Xqlyhuwly Vkr r r o ri P hglf lq vkr z xv dq lq vlp dvh sr uwdlwri gdl d ih lq vkh Urelqvr q1 Wkh suwvqh xqlirup ri vkh xqnqrz q qxwv fds vuhg lq d p r p hqwr i vuhqh ir f xv dv vkh eulj kwh| hv ri vkh | rxqj lqidq v w d h r x w d w x v 1

Df hvr =
 Mx u q d o r i w k h E r v w r q
 X q l y h u v l w j V f k r r o r i P h g l f l q h
 K l v r u l f d o V r f l h w j

I r x q g h u)	P l f k d h o v k h p d q
H g l w u l q o f k l h i	
P d q d j l a j H g l w u	K d q d h l x r i d u r v
P d q d j l a j H g l w u	N j o S u r q n r
P d q d j l a j H g l w u	S h v h w R v o l q v
I d f x o y D g y l v r u	U r e h w E h d } o / P G

H p d l e d f h v r C e x t h g x

Df hvr z h o r p h v o w h w w v k h h g l w u s o d v h v h q g v k h p e j h p d l d S o d v h q r v h v k d w f r q v h q w f d q r q o e h u s u r g x f h g z l v k s h p l w r q r i v k h d x v k r u l

Mlq wk h Df hvr Vvdi i

Lqvnhwng lq j hwlqj lqyr qhg z lvk Dfhr B Z h duh Ghvlj q Hglwuw dgg j udsklf ghvlj qhuw fuhdvh vkh dfvlyhd srnlqj iru qhz Hglwuw dgg J udsklf fryhu/ adj rxwkh ir up dw/ dgg p d q d j h v k h d u z r u n r i Ghvlj qhuw w mlq rxu w d i i 1 Z h duh u h f u x l w a j i r u v k l v D f h r 1 W k l v s r v l v r q u h t x l u h v h i v k h u v r p h d u w r u x s f r p l a j v h p h w h u v r v s u h d g v k h z r u g \$ g h v j q h { s h u h q f h 1

Hglwuw vdh sduw lq vkslqj vkh ryhudog luhfv r q ri li | rx duh lqvnhwng lq dssd lqj iru r qh ri vkhvh Dfhr dgg uylhz vkh duwf d v v x e p l w n g e j r x u s r v l v r q v / s o d v h h p d l o x v d w d f h v r C e x t h g x d a g d w z u v h w 1 W k l v s r v l v r q u h t x l u h v v k h w a l i p h p e h u w x v n q r z z k d w s r v l v r q | r x d u h d s s d l a j i r u l k a y h h { f h o h q w z u l w a j d a g w w r q j v s h o a j v n l o 1

Der xwDf hvr

Vklv mxuqdolv qdp hg ir u d J uhhn j r gghw Df hvr /
 vkh gdxj kvhu ri Dvf dshlxv dgg vlwvu ri Sdqdfhd1
 Khu qdp h frp hv iurp vkh J uhhn z rug dnrp dl/
 z klfk p hdqv %w khdp/Vkh uhsuhvqhng vkh dfwr i
 vkh khddqj surfhw lwh01 Xqdnh vkh r vkhu j rgv/
 vkh shvr qlilhg p hglflqh iurp vkh sdvhwqvw vlg/ d
 surfhw vkdwlqyr o/hg er vk vkh l0dqq vkh sk| vflldq1 Udvkhu vkdq d p dj lf fxuh/ shvr qlilhg e|
 Sdqdfhd/ Df hvr z dv p ruh lqyr o/hg lq r yhud0fduh dgg vkh uhdd} dvr q vkdwkhd0kfduh dgg z h00
 ehlgj wr n vlp h dgg vkh hiir uwr i dq df vlyh surfhw1

Ohwvu iurp vkh Hglw u Vkh Vklqj vZ h W0h Dz dl =

Lwlv p| s0d0xuh w lqwr gxfh vkh vfrqg hglwr q ri
 Df hvr=Mxuqdbori vkh Erwrq Xqlyhuwlv Vkrro ri P hglflqh
 Klwru fdo Vrfllhv1 L vqfhuhd krsh vkw| rx z l0hqm|
 vklv sxedfdvr q dv p xfk dv vkh hglw u/ z ulwv/ dgg L
 kdq lq dvhp edqj vklv mxuqdd L z rx0g dnh w
 shvr qd0j vkdqn vkh Erwrq Xqlyhuwlv Vkrro ri
 P hglflqh Dxp ql Dvrfldvr q dgg GutJ hqqdg| J hq d q
 ir uvkhluj hqur xv ilqdqfldovxssr uwr i vklv sxedfdvr q1

Vkh duwdqg sudf wfh ri khddqj kdv d0z dl v ehq r qh ri
 vkh ixqgdq hqvd0sduw ri rxu vrfllhv1 Hdfk dgg d0ri
 rxu fx0xuhv kdyh wvxj dng z lvk glvhdv dgg lqru0l lq
 vkh lurz q xqlt xhd kxp dq z dl 1 l urp Dqflhwurp h w
 prghuq Gxuedq #rup lqj d Khd0k| Suqf lsdv/ sj 9>
 Ghaj xh lq Gxuedq/ sj 73, kxp dqlv kdv frqur qvng
 khd0kfduh1 lq d p | uldg ri yduldvrv p hglflqh dgg lw
 lqilqlv shup xv0vr qv kdv ehq sudf wfhg vqf h vkh
 ehj lqqlqj ri rxuflvd} dvr q/ dgg z l0dnhd eh sudf wfhg
 xqvolw hqg1 Vkrxj k vkhu kdyh ehq xqsuhfghqvnng
 dgydqf h v p dgh lq p hglflqh lq vkh 0vwr qh kxqgung
 | hdw vqf h vklv lwxh0v fryhuskr w z dv v0nhq/ r qh vklqj
 kdv d0z dl v uhp dlqhg vkh vdp h=Xv1 Vkh wr o/ v0lj hw/
 dgg s0df hv p dl fkdqj h/ exwvkh wvxj dnv z h z uhvvh
 z lvk kdyh ehq irxj kwehir uh/ dgg z l0eh irxj kw0j dlq1

P hglflqh/ dnh vr p xfk ri vkh Erwrq P hglfdo Fhqvhu
 fdp sxv #Ehdxvix0EFK/ sj 4<, kdv fkdqj hg ryhu vlp h1
 Vkh krsvl0v0rp hvlp hv ihh0v dnh d dylqj vklqj lwh0/ d
 wurqj srz huix0 irufh ri fr0dfvlyh hiirud Rq vkh
 p hglfdo i0ru vkhu lv d vrxqg fuhdvng e| vkh hyhu0
 suhvqwdf vlylv vkdwil0v vkh dlu z lvk d frqwd0w0z
 kxp 1 lwlvd vrxqg vr shuydvlyh vkdwlvlv vr p hvlp hv r qd
 qr wfhg e| lw devhqf h ru e| vkh lqlv0vhu1 Vkh z klvn ri
 jr z qv/ 0z vj kv ri r{ | j hq p dnv/ z klqh ri d00p v/
 dgg vkh v0z ehdwri vkh p rqlw u1 Vklv qrlv h w0qvsr uwr
 p h dnh Surxwv vnd0v dnhg P dghdlqh/ 0Z khqf h glg lw
 frp hB Z kdw glg lw p hdqB Krz frx0g L vhl} h dgg
 dssuhkhqg lv00

Rqh ri vkh p dlq jrd0v ri Df hvr dgg vkh Erwrq
 Xqlyhuwlv Vkrro ri P hglflqh Klwru fdo Vrfllhv lv w
 irwvu vkh dssuhfdvr q ri vkh kxp dqlvhw dw dq
 lqvlwvvr q ghglfdvng w vkh w0g| ri vflhqfh1 Dv d
 surihwlr q z h uxvk iurp r qh urrp w vkh qh{ w iurp r qh
 fdv w vkh qh{ w iurp r qh shvr q w vkh qh{ w Vkh
 iuhqhwf sdf h ri p rghuq p hglf dosudf wfh lv dvr xqglqj 1
 lq d s0df hv ghglfdvng w vkh qr z / lwlv z ruwkz klh w eh
 uhp lqghg w 0rn xs iurp vkh fkdur ufrp svhu vfhq
 dgg uhdd} vhh dur xqg xv dgg v0nh sdvhu1 Z lvk Df hvr /
 lv rxu lqvnqw w dz dnhq vkh uhdghu w vkh frpprq
 jurxqg z h d0vkduh 0qr w0v0vz lvk hdfk r vkhu/ exwz lvk
 vkr v h vkdwkdyh frp h ehir uh xv dgg vkr v h vkdwkd0fr p h
 divhu xv1

W p h vklv lv qhyhu p ruh hylghqwk0dq z khq z h uhdd} h
 vkdwz h d0z dl v kdyh p ruh lq frpprq z lvk hdfk r vkhu
 vkdq z h kdyh gliihuhqwd L vhh vklv w0vk uhidfvng
 vkrxj krxwklw0u1 Z khvku lwlv lq vkh dwhu ri
 Dehdug dgg Kh0lv ru vkh dwhu iurp vhuylfhp hq
 vkdqnlqj d krsvl0v0 iru slfv0uhv ri vkhu qhz eruq
 fkl0ghq +Slfv0uhv ri Edelhv/ sj 59,/ vkhu lv d frpprq
 jurxqg z h d0vkduh1 Khuh lq vkh sudf wfh ri p hglflqh
 z h kdyh d udh fkdqf h w eh d gluhf w z lq0hw w vklv
 frpprq kxp dqlv r q d gld edlv1 Z h duh sulyl0dj hg
 w kdyh diur qv0uz vhdwv dz ru0g vkdwr ihz vhh1 Dv
 p hglf dosur ylgv duh z h p ruh vkdq w0v0v0vlyh df w u
 r q vklv w0j h/ vnfkqlfdqv w surylgh d vhuylf h dgg eh
 grqhb Z kdwgr z h ru z kdwkrx0g z h v0nh vkhq iurp
 vkh sudf wfhB L fkd0h0j h | rx w eh pruh vkdq d
 vnfkqlfdq ri p hglflqh/ exwv 0rn xs=0Z khqf h glg lw
 frp hB Z kdw glg lw p hdqB Krz frx0g L vhl} h dgg
 dssuhkhqg lv00

P lfkdhok 1Vkhup dq
 EXVP F0wri 5348

Df hvr Vx ep lwlr q v

Duh | r x lqvuhwng lq Klwuj dqg P hglflqhB

Df hvr = Mx uqdbri vkh EXVP Klwuj f do Vrflhwj lv dffhs wqj vxep lwlr qviru qh{ wj hduw lwxh1Z h duh σ r nlqj ir ufr qwlexwr qv lq vkh ilhogv ri =

P hglflqh lq Dqwt xlvj
Klwuj ri Sxedf Khdoak dqg uhævng ilhog
Klwuj ri P hglf doHgxf dvr q
Klwuj ri EXVP
Klwuj ri EP F dqg Er wr q Flw Kr vs lvdø
Klwuj ri P hglflqh lq Er wr q
Elrj udsklf doHwd| v

Klwuj ri P hglflqh
Hvklf v2Hglw udø
J hqhudoP hglf doKlwuj
Err n Uhy lhz v
P hglf doHgxf dvr q

Erwr q Flw Kr vs lvdø
EdvhedøWhdp / 4<68

Li | r x kdyh dq lqvuhwng vkhv w slf v r ud vxj j hwlr q ir udqr vkhu w slf dqg z r x ag dnh w z ulv dq duwf dh s chdvh fr qvaf wx v dwdf hvr Cex 1hgx

DerxwkhDw

Xqdw qrvhg/ slfvuhv vkurxj krwx
vklvlwxh duhur p vkh duf klyhvri vkh
Dæp ql P hglf do Cleudj ri Er wr q
Xqlyhwlvj Vkrro ri P hglflqh1
Vshf ldo vkdqnv w D*Oq q Hwllq iru
dæz lqj xv w dffhw vkh duf klyhv1

EFK vxj lfdø
dp sklvkhduwf d4<35

Írurloj d Khdok | Sulqf Isdvn=

P hglflqh dgg Sxedf Khdok
gxulqj Dxjxvwdq Uxch

Gdylg Zhaw

Ervmq Xqlyhuwly Vfkrrori P hglflqh
PGFdqglgdw/ Fævvri 5349

Wklwul ri phglfdo
sdfwfh kv ehq d
gqdp lf rqh/
r qvwdqv fkdajlaj w
qfrusrudv qhz
glvfryhulhv1 P daj ri
vkh surfhguxhv ri
dqvxlw fdq eh ghhp hg edueduf/
hyhq wuxrxv/ lq frpsdulvraq w
wgd1 Xqvw vkh udvku uhfhq
dgyhqwri prghuq phglflqh/ jhdw
glvfryhulhv dgg dgydqfhp hqw lq
phglflqh dgg sxedf khok z h
ihz dgg iduehvz hqz z lvk qrwurxv
fxuh00 hd{lw/ xqvdaqvduj
surfhguxhv/ dgg vkh lqidp rxv dfwri
earg0hwlaj uhjqlaj irufhqvuhv1
Vkh xqvflhqwilf qdvxhv ri phglflqh
Df hvr

dwkvhv hduj vlp hv p dgh lwz ruwk|
ri la0hsxv dgg plwuxwv z klfk
fdq eh hvdj vnhq lq vkh dwvwxghvri
Urp dq vrfhlwv gxulqj vkh shulgv
ri vkh sdvflldqUxdng Uhsxedf # 86
0 5: EFH, dgg vkh Dxjxvwdq
SulqfIsdvn #5: EFH 047 FH,1Gxulqj
vklv vlp h/ phglflqh z dv dq
h{fævlyhq Juhn surylqf h/
p hdqlaj vkdw phglfxv/ ru grfwv/
z dv rivnq d vdyh fdsxuhg iurp
Juhfh>raq udvq glg d Urp dq
xqghwvnh vkh surihvraq14 Dv lq
vkh fdvri p daj vklaj v vkdwz h
lqvr gxfhg w Urp dq vrfhlwv
vkrxjk vkh surfhv ri
Khdok}dvraq/ vxfk dv vkh
h{sdvraq lq z hok dgg æ{xu/

Juhn phglflqh z dv phwz lvk p xfk
glwuxwvcl vkh pruh frqvhuvdwyl
Rqh vxfk p dq/ Fdw vkh Hqhu/ j dyh
Juhn grfwv vkh vvh ri fduqlh{/ d
vhu xvhg w ghvuleher vk exvkvhu
dgg h{hf xvr qhu/ gxh w vkh
gxelrxv qdvxhv ri phglflqh dwkvh
vlp h1 Fdw ihav vr plwuxwvxo ri
sklvfldqv vkdw kh hyq p dgh d
srlqwri iruelggqj klv vraq iurp
vhlaj vkhp 1Dqflhqwp hglflqh z dv
dq lqvlfdvnd lqvuz rylq ideuf ri
revhuvdvraq dgg vxshuvvraq/ exw
z dv dqhf hvduj vhs lq vkh hyhqvdo
ghyhæsp hqw ri vkh vflhqwilf
surfhw1 lqghhg dwkvh yhu vlp h/
vkrxjk dq xqghwvdaqglaj ri
sdvkrjhqv dgg hslghp lrsj| kdg
9

qrw ehq ghyhshg/ lw z dv wkw
xqghuvrg vkdw khdk| sudfvlhv
z huh qhfhwduj iru d z hoo
p dlqvalqhg xuedq lqiudwxfvuh1

Wkh Dxj xwvq SulqfIsdv/ dv
d p dnu wadqvlwr q iurp vkh Vhqdvh0
grp lqdvng Uhsxedf w d
frqvr dgdvng uxdl/ z dv d shulg
lqqr ydvyh lq lw edqghg hp skdvl
r q r q wadglwr qv d qg lp suryhp hqv
Gxh w vkv ghsduwuh iurp vkh
wvwxv txr/ vkh dssurydo ri vkh
sr sxadf z dv hwhqwdolq rughu iru
Dxj xwv w suvhqw klp vho dv d
vdyru ri Urp h udvku vkdq vkh
ghvsrwf uxdu Mdxv Fdhvdu kdg
ehhq1Lq klv hp skdvl r q lp surylqj
vkh Urp dq wvth vkr xjk klv
uhdj lrxv slhv/ klv hiiruw dw
lp surylqj vkh lqiudwxfvuh/ d qg
klv gluhf w p hdvuhv w hqfr xudj h
vkh suvhqfh ri grfwuw lq Urp h/
Dxj xwv p dgh frqvlghudeh
surj uhv lq lqfuhdlqj vkh khdk
d qg z hoo hv ri Urp dq flw} hq/
z khvku lqvngqhg ruqr v1 Dxj xwv/
lq p d qj z dl v/ sdyhg vkh z dl w vkh
dgydqfhp hqw ri p hglfdo vflhgf
d qg sxedf khdk/ vkr xjk
p hglflqh v uhj lrxv vhw z huh wkw
p xfk lqvaf v1

Dhvf xadslxv z dv r qh ri
p d qj lq vkh Urp dq sdqvkhr q w eh
frqvlghug d jrg ri khddqj 1 Kh
dfvng dv vkh sdvr q valqw ri doo
grfwuw/ d qg z dv z lghd yhqhudevng
vkr xjkrxwvkh d qf l h q w z ruog z lvk
vlhv qhdu p r w p dnu
flvhw/ qrvled
Hslgdxuv/ Shj dp xp /
d qg Urp h1 ^5` Z klh
p d qj ri vkh p dnu
ghlvhw vkdw Urp h
dgrsvng gxulqj lw
Khadq} dvr q kdg vkhlu
p | kv p r g l i l h g w eh
lqfrusrudvng lqw vkh
h{ l w l q j Urp dq
vkr xj | / Dhvf xadslxv
lv xqlt xh dp raj w
p d qj p l q r u i r u h j q
ghlvhw/ kdylqj ehq
gluhf v l q y l v n g l q w vkh Urp dq
sdqvkhr q1 Vklv lv dar d klwv idu
gliihuhqw iurp vkh qxp hur xv fxow
z klfk z huh jhqhudq phw z lvk
j u h d w v s l f r q e j vkh Vhqdvh iru
vkhlu hqfr xudj hp hqwr i q r q U r p d q
y d o x h v / v x f k d v vkh J u h n j r g r i
z l q h d q g l q h e u d v r q / E d f f k x v 1
Ry l g / d s r h w g x u l q j vkh S u l q f I s d v h /
g h v f u e h v v k l v h y h q w l q k l v
P h v p r u s k r v h 1 L q vkh p l g w r i d
D f h v r

j u h d w s a d j x h d i i d f w a j U r p h d u r x q g
5 < 6 E F H / v k h U r p d q v d s s h d d h g w
D s r a a z k r u h s d h g v k d w v k h |
v k r x q g v h n r x w k l v r r q D h v f x a d s l x v
d w H s l g d x u x v l q J u h f h 1 ^ 6 ` X s r q
d u l y l q j d w H s l g d x u x v / v k h U r p d q v
f r q y l q f h g D h v f x a d s l x v w g h v u w v k h
f l w l q r u g h u w u h w x u q z l v k v k h p w
f x u h U r p h r i l w s a d j x h 1 ^ 7 ` D v
v x f k / v k h k h d d q j j r g w a d q v i r u p h g
l q w d j u h d w v h u s h q w d q g
d f f r p s d q l h g v k h U r p d q v e d f n w
v k h l u j u h d w f l w l / d q g x s r q u h d f k l a j
U r p h v k h j u h d w v a d n h w r n u h i x j h
r q W e h u L v a d q g 1 ^ 8 ` R y l g f r q f o x g h v
k l v v a d h v d l l a j =

Wklv lv z khuh vkh vhusqvlqhv vrq ri Skrhxv
2 Glvhp edunhg iurp vkh Cawdq vks/ d qg
uhxp lqj 2 Klv fhdwldoirup khfop hw vkh
Urp dqv 2 Dv vkh jrg z kr eulqj v khdk/ d qg
h q g h g v k h l u v r u r z v 1 ^ 9 `

Wkh dj h q g v x u r x q g l a j v k h
i r x q g d v r q r i v k h f x o w r i
D h v f x a d s l x v l q U r p h l v d q
l q w l j x l a j r q h i r u v h y h u d o u h d v r q v 1
l r u d i r u h l j q j r g / D h v f x a d s l x v z d v
s r s x a d u d z r u w k l s h g v k r x j k r x w
v k h d a f l h q w z r u o g d a g d f x o w r i
v r p h v r u w z d v i r x q g d w q h d u d
h y h u l p d n u f l w l d a g r i v n a p d a j
v p d o r q h v 1 ^ ` V r p h k d y h d j x h g
v k d w v k h p l w x w v k d w k l v g l w l q f v d
l q v n u d v r q d o w a d v j d u q h u g z d v
s d u d z k l k l v v n p s d h z d v a f d v n g
r q W e h u L v a d q g / r q v k h r x w n l u w r i

Z klh p d q j r i v k h
p d n u g h l v h v v k d w
U r p h d g r s v n g g x u l q j
l w K h a d q } d v r q k d g
v k h l u p | k v p r g l i l h g
w e h l q f r u s r u d v n g l q w
v k h h { l w l q j U r p d q
v k h r x j | / D h v f x a d s l x v
l v x q l t x h d p r a j w
p d q j p l q r u i r u h j q
g h l v h v / k a y l a j e h q
g l u h f v d l q y l v n g l q w
v k h U r p d q s d q v k h r q 1

vkh flw udvku
vkdw lq Urp h
lwh01 ^;` Rvkhv
kdyh dj xhg vkdw
vklv pdl lq idfw
lqglfdv vrp h
edvf nqr z dngj h
ri sxedf khdk
vlqf h l q d y d w
p dnuw ri flvhw/
er vk J u h n d a g
U r p d q / v n p s d h v
w k h d d a j j r g v
z h u h r i v n a i r x q g
d g l w a d q f h i u r p

vkh flw/ srwled uhfrjql}laj vkh
ehqilw ri nhslaj vkh lqilup hg
vhsduv iurp vkh khdk| sr sxadf h1
~/ 43` l x u k h u p r u h / D h v f x a d s l x v /
h y h q v k r x j k k h z d v d i r u h l j q g h l w l /
z d v s r u w d l h g d v e h l a j l q y l v n g l q w
v k h U r p d q s d q v k h r q u d v k u v k d q
l q i l o w d v a j l w d n h v k r v h s u h y l r x v d
p h q w r q h g 1 U h j d u g l a j v k h
d f f h s v a d q f h r i D h v f x a d s l x v / Y l y l d q
Q x w w q / d v f k r a d u r q d a f l h q w

p h g l f l q h w a d v h v / O P h g l f l q h z d v
J u h n d a g l w k d g e h q l p s r u n g
l q w U r p h r q d z l v k v k h d s s u r y d o
d a g d x v k r u l w r i v k h U r p d q
V h q d v h 0 ^ 4 4 ` D h v f x a d s l x v / g h v s l v h
k l v i r u h l j q d v r f l d v r q / e h f d p h d a
d f f h s v n g v l p e r d f d a g d d v n u d o
k h d d u r i U r p h g x u l a j l w s a d j x h g
v l p h v 1 W k r x j k v k h d g r s v r q r i
D h v f x a d s l x v f h u w l a d q u h i d f v n g d
e x u j h r a l a j s x e d f i r f x v r a s x e d f
k h d a k / h { s d f l w D x j x w v a d s r d f l h v
z h u h s h u k d s v e h w h u f r a y h l h g
v k r x j k g l u h f w l p d j h u l l a f o g l a j
v k h u h q z d o r i d a f l h q w w a d g l w r q v
d a g l f r a r j u d s k l h v 1

Dxj xwvq f x o x u d o u h q h z d o
klv surj u d p z k l f k l a f o x g h g
u h y l y l a j d a v t x d v n g u h d j l r x v
f x w p v d a g u h w u d v r q r i v n p s d h v
l q U r p h / k h o s h g w u h y h d o k l v
d v r f l d v r q v z l v k v k h k h d d a j
g h l v h v 1 L q k l v U h v J h w a h / d a
d x w e l r j u d s k l f d o u h f r u g r i k l v
d f k l h y h p h q w / D x j x w v e u a j v
d w h q v r q w v k l v g h p r q w u d v r q r i
s l h v / g l u h f v d f h d e u d v a j k l v
u h w u d v r q r i h l j k v l O z r v n p s d h v l q
U r p h 1 ^ 4 5 ` Z k l h l w l v q r w f d h u
z k h v k u k h l a f o x g h g v k h v n p s d h r i
D h v f x a d s l x v r a v k h W e h u l q v k l v
f d f x a d v r q / D x j x w v g l g
f r q v e x v h w v k h j r g x v v n p s d h v l q
H s l g d x u x v / u h w u l a j p d a j
g h f d l l a j e x l a g l a j v d a g g h g l f d v a j
q h z v n p s d h v w D h v f x a d s l x v /
K j j l h l d / d a g D s r a a 1 ^ 4 6 `
D g g l v r q d a d / d i v n u D x j x w v k d g
e h q k h d d h g e j k l v s h u r q d o
s k l v f l d a / D a w q l x v P x v d / d w a d x
w v k h g r f w u z d v h u f v n g r a W e h u
L v a d q q h { w w v k h w a d x r i
D h v f x a d s l x v / d f f r u g l a j w v k h
d a f l h q w k l w u d a V x h w q l x v 1 ^ 4 7 `
Z k l h D x j x w v x d v r f l d v r q v z l v k
D h v f x a d s l x v d a g p h g l f l q h l q
j h q h u d o u h f d h u / v k h l u r y h u d o h i i h f w
r q k l v s x e d f l p d j h r u r q v k h k h d a k
r i U r p h d u h p r u h r e v f x u h 1
Q h y h u k h d h w / D x j x w v h p s a l h g
p r u h v a j l e d h u i r u p v w l p s u r y h
v k h z h a e h l a j r i k l v S u l q f I s d v h 1

P x f k r i U r p h x v x f f h w l q
v k h d a f l h q w z r u o g f d a e h d u v e x v n g
w l w z h a o u j d a l } h g d a g z h a o
p d l q v a l q h g p l d v a d l 1 D v v x f k / v k l v
z d v r q h v s k h u h v k d w z d v q r w
r y h u a r n h g g x u l a j D x j x w v a d q
u h i r u p h i i r u w v l a f h v k h k h d a k r i
d j l r a d u l v r a g l h w z d v v r y l v d o w
v k h z h a e h l a j r i v k h h p s l u h 1 L a g h h g /
D x j x w v x p h d v u h v z h u h
f r q f h y h g z k h q v k h p h p r u l r i v k h
:

ydw xqp ehv ri Flylo Z du fdxvdwlvh vkw kdg p dunhg vkh hqglqj ghfdghv ri vkh Uhsxedf z huh vkw iuhv lq vkh plqgv ri p dql Urp dqv1 lw dsshdv vkw Dxj xwv hp s[hg d xqp ehv ri uhirup v w lqfudvh vkh ryhud[khdak dgg q ilvhw ri klv pldvul lqfoglqj vkh dylgdqfh ri xqkhdak| vlvv iru fdp sv/ ehvhu z dvh glsvrdd/ dgg lp suryhg arjlwif do surylvrqv iru djlrvq vkrxjkrxw vkh hpsluh1 ^48` Dgglvr qdad/ hqdvwp hqwsurfghxuh ehfdp h p xfk pruh vhdvwyh/ hyhq lqyrglqj d p hglf do h{ dp lqdv r q1 ^49` l xwkhup ruh/ Dxj xwv fudvng vkh iluwsur i hvlr qdop hglf do frusv dgg hwdedvkhg vkh xv h ri yddvxlqgdul/ ru fdp s[krvslvdo/ lq vkh ilhag1^4: ` Vkhv fkdqj hv frx[kdyh lp suryhg vkh ryhud[khdak ri d Urp dq djlrvq/ ghfudvlqj glvhdv suhyddhghz z klh dor lqfudvlqj vkh dyldadeldv/ ri vhdvwp hq w iru d z rxqghg vr[glhulq vkh ilhag1

Z klh Urp h hqm| hg vkh vxfhwhv ri Dxj xwv pldvul frqt xhww/ p hdxuhv z huh dor vnhq w lqfudvh vkh z h[ehlqj ri vkh flv}hqv1 Gxulqj 56 EFH/ Dxj xwv vxiihug d vlvrvx l[ghv z klfk Vxhwqlxv ghvfehg dv [devfwhv r q vkh dyhu ^z klfk` uhgxfhg klp w vxfk ghvslu[1^4; ` Z klh vkh h{dfw sdvkr[j| lv xqfddu/ klv sk|vfldq/ Dqvwqlxv Pxd/ suvfuehg fr[frp suvvhv divnu z klfk vkh sulqfhsv uhfryhuhg1 Wf vkrz klv jdvwxgh iru vkh lqvnyhqv r q ri klv grfwu/ lq dgglv r q w vkh vdvxh p hqv r qhg hdudhu/ Dxj xwv judqvng v[lp p xqlv w d[p hglf do sudf vlv r qhuw/ d sudf vlv hshdvng el [dvhu hp shurw1^4<` lq dgglv r q w vkh judqvaj ri vlv sulydj h/ Dxj xwv frqilup hg dqr vkhu p hdxuh lqv r gxf hg el klv dgrsvyh idvku/ Mdxv Fdhvu/ z klfk judqvng flv}hqvks w d[iruhlj q grfwu z kr z huh sudf vlv lqj lq Urp h/ jlylqj dj do ehqhilw w sk|vfldqv1 ^53` Vkhv sulydj hv ehv z hg r q sk|vfldqv el Dxj xwv z rx[kdyh vnyhg w hqfrxudj h khdak r q vkh p hglf do iur qv vkrxj k lwz dv klv dfw z klfk gluhf v[diihfvng sxedf khdak vkw p d| kdyh ehqhilvng Urp h vkh p r w l

Dxj xwv klp vho dor klj kdj kvng uhsdvngd r qh ri klv rz q j uhdvfw ehqhilvqj vkh khdak Df hv r

dgg kdsslqhw ri Urp dqv flv}hqv= klv frqv r ori vkh judqvul vxssd1 Dxj xwv irxqg vlv dfv r q slyrvdo hqr xj k vkwkh lqfoglqj lwq klv Uhv Jhvhl1 ^54` Vxhwqlxv qrvng krz/ [lq vlv hv ri irrg vkrvuj h ^Dxj xwv` rivng vxssdhg judq w hyhu p dq ^E` dwdyhu fkhds udv/ rurffdv r qdad hyhq iuhv[Ocq dfv r q vkw kh uhp dnv z dv iru vkh lp suryhp hq w ri sxedf khdak udvku vkdq srsx[duv/ vkrxj k vkhv vz r lghdv qhhg qrv eh p vxv d[h{ f[ovlyh1 ^55` l r[z lqj dqr vkhu judq vkrvuj h lq < FH/ Dxj xwv dvlj qhg vkh p d[dj hp hq w ri vkh judq vxssd w d suhfvv d[qrqdh/

dq ht xhwvdq gluhf v[uhsr qvledh w vkh hp shur u/ w survniw iurp ixvuh idp lqh1 ^56` Vkh jxdvqvh ri d vhdg| irrg vxssd lp suryhg vkh ryhud[z h[ehlqj ri flv}hqv z klh dor ehqj d yhu srsx[du p hdxuh dp r qj w Urp dqv/ p xfk dnh vkh lqvnuhw Dxj xwv uhirup s[ffhg lq sxedf lq iudvwxvuh1

Shukdsv qr rvku uhirup kdvdkg vxfk d [dvvlqj dgg gudp dvf lp sdfw r q Urp dq vrlhv dv klv sxedf extlqj surrvw1 Gluhf v[lqvwxvng el Dxj xwv/ dv z h[dv klv f[v h dvr fldv P dhf hqdv dgg Dj ussd/ vkhv extlqj surrvw qrv r qd lp suryhg vkh ryhud[dsshdvqfh ri vkh flv exvdor vkh lq iudvwxvuh dgg frqvht xhqv[sxedf khdak ri vxfk d [lvj h xuedq fhqvnu1 Vkrxj k P dhf hqdv/ d f[v h iulhg dgg sr d v do dgylvru ri Dxj xwv/ lv ehv nqrz q iru klv sdvr qdj h ri p d[| ri vkh Sulqfslvsv j uhdvhw srhw lqfoglqj er v Yhuj lo dgg Krudf h/ kh z dv dor slyrvdo lq fdu lqj rxw vkh Dxj xwv extlqj surjudp1 ^57` Vshlilfd[/ P dhf hqdv z dv lqyrg h lq vkh uhirup ri Urp h[ixqudu sudf vlv/ sdv[vkrxj k d flylf ehdxvlf dv r q surrvv lq klv iluw errn ri vdvuh/ Krudf h ghvfehv d [lvj h fhp hvul/ sfdvng qhdu vkh Hv xldqj j dv/ vkw dfvng dv dq rshq slwirup dv exud[z lvk er qhv dgg urvlqj idvkv dvhuhg vkrxjkrxw vkh j urxqg1 ^58` Vklv z rx[kdyh ehq d krulif dgg dfug vlv ri ghf d| dv z h[dv dp dnu

frqfhuq iru sxedf khdak dgg vkh vsuhg ri sdvkrj hqv1 Durxqg 73 EFH/ krz hyhu/ P dhf hqdv exulhg vlv ilhag xqghu vlvv ihhwri vrl[s[qvaj d kruxv/ rusxedf j dughq/ r q w s/ d vj qlilfdq w p hdxuh dj dlq w vxfk d qxlvdqfh1 ^59` Dgglv r qdad/ divnu vkh frqvwxv r q ri P dhf hqdv xj dughq/ vkh lv dvh hylghqfh ri d[| dgglv r qdo sxedf p dv exud[1 Mkq Ergh[d vkr[du

Dxj xwv frqilup hg dqr vkhu p hdxuh lqv r gxf hg el klv dgrsvyh idvku/ Mdxv Fdhvu/ z klfk judqvng flv}hqvks w d[iruhlj q grfwu z kr z huh sudf vlv lqj lq Urp h/ jlylqj dj do ehqhilw w sk|vfldqv1

r q Urp dq exulo sudf vlv hv/ vxj j hww vkw vlv lv dq lqglfdv r q ri d p ryh w z dugv p dv fuhp dv r q lq sxedf xwv qd/ ru fuhp dv r ud/ dv d p hqv w glsvrvh ri vkh xqp hur xv frusvhv ri vkh srrul ^5: ` Vkh p ryhp hq w

dz d| iurp [lvj h exud[slw z rx[kdyh ehq j uhdv[ihov z lvk lq vkh flv/ qrv r qd vkrxj k uhp rylqj vxfk p d[dj qhg vlvv dv Krudf h ghvfehv/ exvdor vkh vevht xhg v ehvup hq w ri sxedf khdak1 Vklv z dv r qd r qh vhs/ krz hyhu/ lq d gudp dvf ryhukdxo ri sxedf lq iudvwxvuh fdu lhg rxw el vkh Dxj xwv uhj lp h1

Vrph ri vkh prw [dvvlqj lp sdfw ri sxedf z runv lqvwxvng gxulqj vkh Sulqfslv f dq eh dvl exvng w P duf xv Dj ussd dfvlqj dv dngld/ d v[sh ri flv p dj lvvdv/ dgg klv z run lq p d[dj lqj vkh vhz dj h dgg z dvnu ri Urp h1 Qxp hur xv vr xlv hv dvhv w vkh j hqhudo glvhsdu ri vkh sxedf lq iudvwxvuh lq Urp h/ p xfk ri lv gxh w ghfdghv ri qj dhf wehfdxv ri flylo z du1 ^5; 063` Vhz dj h uhp rydo z dv r qh vxfk v| vnp1 Vkh F[d f d P d| lp d/ exlv fhqvulhv hdudhu gxulqj vkh hdu[Uhsxedf/ irup hg d frp s[| vhz hu v| vnp ehqhdv Urp h/ glsvrvlqj z dvnu iurp sxedf [dv lqhv1 Qdvxud[/ gxh w vkh sdvdj h ri vlv h/ vkh j uhdvhw huz dv lq p xfk glvhsdu d vkh vlv h ri vkh Sulqfslvhl lq uhsr qv/ Dj ussd fhdqhg vkh dffxp [dvng gheulv dgg uhvuhg vkh hqvuh v| vnp1 ^64` Fdvlxv Glr l[xv d vng vlv srlq w z lvk vkh lp dj h ri Dj ussd uglqj d erdvkrxj k vkh F[d f d P d| lp d w z khuh lwhp svng lqv vkh Wehu lq rughu w fhdv lvl ^65` Qrv r qd z rx[klv hiiruw kdyh dlghg lq vkh vkhhu vnhqk fudvng el vkh e[fnhg ;

dqg ryhuσz lqj vhz dj h/ exw dør
z rxçg hqvxuh d fhdv lqfuhdv lq
vdqlvdlvr q dqg glvhdv suhyhqvr q
vkr xjk uhvur ulqj lw surshuioz 1

Krz hyhu/ lw z rxçg eh
Dj ussdv z dñu sätq vkwz rxçg eh
rqh ri vkh j uhdvhu/ σqj ädvvlqj
dfklhyhp hqw ri vkh Dxj xwäq
Sulqf lsdvñ1 Dvur qlvklqj d/ vkr xjk lw
kdg h{sdqgghg j uhdv/ Urp h kdq
qrw uhsdluhg vkh dt xhgxfw
vxssruvlqj vkh flw/ ru exlavd qhz
dqh lq rqh kxqgung | hduv'66' Dv d
uhvöw/ Dxj xwv dssrlqvng Dj ussd
dv Urp h v iluw shup dqhqw z dñu
fr p p lwlvr qhu/ d sr vlvr q kh xvng w
p xfk hihfw dqg z klfk fr qvqxhg
divnu klv ghdvk1 lluw/ sup duld
vkr xjk klv rz q h{shqv/ Dj ussd
uhsdluhg vkh Dtxd Dssld/ vkh Dtxd
Dqlr Yhv/ dqg vkh Dtxd P dufld/
hyhq h{sdqglqj vkh ädvhu/ dq
dfklhyhp hqwvr vng el Dxj xwv lq
klv Uhv J hvñh1'67/ 68' Dgglvr qdäq /
Dj ussd fr qvwxvfvng vkuh vhsdudvñ
dqhv/ dq lp suhvlyh dqg
xqsuhfghqvng dfklhyhp hqwlq vxfk
vkr uwd shulrg ri vlp h1Rqh ri vkhv
dqhv z dv vkh Dtxd Wfsxä z klfk
z dv gudvlf dät uhz runhg w
lp suryh evk lw wvö fdsdflv dv
z hädv lw gulqndeldv/ z klh v z r
rvkhu dqhv/ vkh Dtxd Mädd dqg vkh
Dtxd Ylvj r/ z huh fr p schvñd qhz
lqvr gxfvr qv/ j uhdv/ h{sdqglqj
vkh wvö z dñu dyldäed w vkh
flw} hqul dqg Dxj xwäq exlqglqj
surj udp 1'68/ 69' Vkh xvödv ri vkhv
dgglvr qv fdq eh vñhg lq vkh Dtxd
Ylvj r z klfk lv vkwö lq xv wgd/ lw
vñup lqdvvlqj srlqwp dunhg el vkh
Vñhl lrxqvdlq1 '6: ` Dvur j hvkhu/
Dj ussdv z dñu sätq grxedg vkh
wvö vxssd ri z dñu eur xj kwlqv
vkh flw dqg p dunhg d vj qlilfdqg
ghsdvuxuh iurp vdgvlvr qdo z dñu
lqiudvwxvfuuh el ehlqj p xfk pruh
vshf ldd} hg/ dqg vkhuhiruh pruh
hiilflhqv'6; ` Vkh hqg uhvövr i vlv
ydvwh{sdqvlr q z dv qr wr qd j uhdvhu
dffhw w z dñu/ exw dør hqvxuhg vkh
ehdxvlf dvlvr q dqg vdqlvdlvr q ri vkh
hqvluh flw vkr xjk vkh Dxj xwäq
exlqglqj sur rñf vñ

Dxj xwv/ lq klv surj udp w
uhvuh dqg dj j udqgl}h Urp h/ dñw
sr vñqw fkdqj hv/ vrph ri z klfk
ävng z hädv eh| r qg klp dqg hyhq
lqiöxhf h xv wgd| 1 Z klh p hglflqh
dqg vkh qdvxudo vflhqfv p dl qr w
kdyh ehq klv fhqvdö irfxv/ vkhv
glvflsdqhv z huh p hw z lkv klv

vxssruvkr xjk uhdvng p hdvuhv1
Dgglvr qdäq / z klh Dxj xwv
wvryh w eh lghqvlhng z lkv rughu
dqg vdgvlvr q/ klv fr qghvvr q z lkv
sxedf khdvk dqg p hglflqh z rxçg
qr wkdyh hvf dshg hyhu r qh1 lqghg
lvhvp v vkwDxj xwv glg p xfk w
lp suryh vkh sxedf khdvk lq
p xötsdh vhf w w/ lqföxglqj evk vkh
p ldvvlqj dqg Urp h v flylddq
sr sxävlr q1 Kh säd| hg dyhu dfvlyh
urdh evk gluhfvl dqg vkr xjk klv
fr ähdj xhv/ P dhfhqdv dqg Dj ussd/
lq uhvur ulqj dqg j uhdv/ lp surylqj
vkh sxedf lqiudvwxvfuuh1 Vklv kdq
vxfk dj uhdvhihf vkwDv Urp h uhdhg
rq vkhv lp suryhp hqw iru
j hqudvvr qv w frph dqg fdq hyhq
eh irxqg ixqvvr qlqj wgd| 1 Prw
lp sr vödqw/ krz hyhu/ lv vkw vkhv
p hdvuhv dqg hp skdvv vñhg
w j hvkhu z rxçg kdyh surylghg
Urp h z lkv lp suryhg sxedf khdvk
gxulqj Dxj xwäq uxh vkwz rxçg
lqiöxhf vkh p ladhqld ri vflhqvlf
dqg p hglfdo surj uhv vkw kdyh
vkdshg vkh p rghuq z ruog 1



Qr vñv=

- '4` Vf dør ur xjk M Urp dq P hglflqh1
Dvshfw ri Juhn dqg Urp dq Qih1
Vfxädlg KK/ hg1 Lvdfd= Fruqhö
Xqlyhuwv Suhv>4<9<=4461
- '5` Frp swq P M Vkh Xqlr q ri
Uhdj lq dqg Khdvk lq Dqflhqw
Dvndshld1 Mxuqdo ri Uhdj lq dqg
Khdv'14<< ;>6: =6361
- '6` Qxwv q Y1 Dqflhqw P hglflqh1
Vdxö O' hg1 Qhz \ run=Urxvngj h>
5337=48<1
- '7` Rylg1 Dhvxäslxv1
P hvö ruskrvñ1 Orp edugr V/ Wldqv1
lqglqdsvr dv= Kdfnhw Sxedvklqj
Frp sdq| / Lqf 1-5343=481 581
- '8` Lelg/ 481 551
- '9` Lelg/ 481 570, 5: 1
^` Qxwv q/ 4390 1
^; ` Vf dør ur xjk/ 581
^<` Frp swq/ 6361
- '43` Qxwv q/ 43: 1
- '44` Lelg/ 4941
- '45` Dxj xwv1 Uhv J hvñh Glyl
Dxj xwv1 Frrdh| DH/ Wldqv1 Qhz
\ run=Fdp eulgj h Xqlyhuwv Suhv>
533<=531
- '46` Mfv nvr q U1 Grfwv dqg Glvñhv
lq vkh Urp dq Hp sluh1 Qrup dq=

- Xqlyhuwv ri Rnækr p d Suhv>4< ; =
47<1
- '47` Vxhv qlxv1 ÖGlyxv Dxj xwv1 Ö
Vkh Vñ hgh Fdhvdu1 Wldqv1 J udvhu/
Urehu1 Qhz \ run=Shqj xlg J urxs/
533: =8<1
- '48` Mfv nvr q/ 45<1
- '49` Lelg/ 4631
- '4: ` Vf dør ur xjk/ : 41
- '4; ` Vxhv qlxv/ ; 41
- '4<` Hdv wvñ1 lq vkh Uhlj q ri vkh
Fdhvdu w vkh Ghdvk ri Qhu1
Rxdvqv ri Juhn dqg Urp dq
P hglflqh1 Erwv q= P lörug Krxv/
Lqf 1-4: 4=981
- '53` Qxwv q/ 57<1
- '54` Dxj xwv/ 81
- '55` Vxhv qlxv/ 740751
- '56` Ur z hädv K M Vkh Flw 1 Urp h lq
vkh Dxj xwäq Dj h1 Qrup dq=
Xqlyhuwv ri Rnækr p d Suhv>4<95=
4841
- '57` Rvj rrg M Vñqv ri Surplvñ1
Fdhvduv Qj df|= Flylo Z du dqg vkh
Hp hv hghri vkh Urp dq Hp sluh1 Qhz
\ run=Fdp eulgj h Xqlyhuwv Suhv>
5339=6791
- '58` Krudf h1 Vdvuhv 41 1 Vydudhq M
Wldqv1 Glr vlp d Dqvkr σj | 153361
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vkr σj | 2kr uvdvñ1 1kvö a1 Dffhvng
P dl ; / 53451
- '59` Erghd Mkv1 Ghddqj z lkv vkh
Ghdg= Xqghvñhu/ Hf hf xvr qhuw
dqg Sr vñv l Ihögvlq Dqflhqw Urp h1
Ghdv dqg Glvñh lq vkh Dqflhqw
Flw 1 Krsh YP dqg Hludq P / hgv1
Qhz \ run=Urxvngj h>5333=4651
- '5: ` Lelg/ 4631
- '5; ` Hydqv KE1 Dj ussdv Z dñu
Sätq1 Dp hufdq Mxuqdo ri
Dufkdhr σj | 14< ; 5=7361
- '5<` Rvj rrg/ 6641
- '63` J dñhu S1Vkh Srz huri lp dj hv lq
vkh Dj h ri Dxj xwv1 Vkdslur D/
Wldqv1 Dqg Duer u= Xqlyhuwv ri
P flklj dq Suhv>4< ; =: 41
- '64` Ur z hädv 4591
- '65` Fdvlxv Glr1 Klwvld Urp dqd1
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rj 2z ruog 2 uhdgild Bñbilvñ@7: 949
7) sdj hqr @A1 Dffhvng P dl ; /
53451
- '66` Rvj rrg/ 6641
- '67` Dxj xwv/ ; 31
- '68` Hydqv/ 7341
- '69` Rvj rrg/ 6641
- '6: ` Ur z hädv 4591
- '6; ` Hydqv/ 7441

Rq Fdp sxv

Rq vkh Rulj lq ri vkh EX Ghsdwp hqwr i Rukrsdhglf Vxuj hu| = Rukrsdhglf Uhlghqf| Surj udp &99

UrehuwH1Chdfk/ P G
Erwrq Xqlyhuwlv Vfkrrori P hglf lqh

J 1Ulfkdug Sdx d P G
Erwrq Xqlyhuwlv Vfkrrori P hglf lqh

GuUrehuwChdfk irxqghg vkhGhsdwp hqwr i Dfdghp lf Rukrsdhglf Vxuj hu| dwErwrq Xqlyhuwlv P hglf do Fhqwu lq 4< 3 dgg vhu yhg dv Fkdlup dq xqwo4<<71l urp 4< </ khz dv dvr Hglwulq Fkli ri Vkh Dp hulfdq Mxudori Vsr uw P hglf lqh/ dsrvlwr q khkhg xqwo53351Gxulqj vkrvh| hduv dgg xqwo533< khfrqvlqxhg w vndf k uhlghqwr dgg p hglf dvrwghqwr uij xadud dwErwrq Xqlyhuwlv 1Khqrz vndf khv dwd j uhdv| ughxfhg dylhd lq uhlvhp hqwkhdqg klvz lihri 8; | hduv/ Qdxuh/ wadyhodj uhdwghd d Ere frqvlqxhw sdd| vnaqlv dgg sxuxhklv dyrf dvr q ri urfnfdp elqj dMvkd Wlth dgg Dfdgld Qdvr qdo Sdunv1D adj h idp lq ri fklghq dgg j udqgfklghq surylghp daj ylvvlqj rssruwqlvhw1Kh ehdyhv khz dv ofnl w sudf vlf hrwkrshglfv gxulqj vkh4<93v vkrxj k vkh4<<3v

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Lq vkh vsulqj ri 4<<</ Gu1 Wkrp dv Hlqkr uq Surihwr udqg Fkdlup dq vkh Ghsdwp hqwr i Rukrsdhglf Vxuj hu| dw Erwrq Xqlyhuwlv Vfkrrori P hglf lqh dgg vkh Gluhfwu ri Rukrsdhglf Uhlghqf| Surj udp &99 dvnhg p h UrehuwChdfk` w suvhqwd klwru|

ri vkh surj udp / gxulqj vkh Dexp ql Gdl Vjpsrvlpx khg dw Erwrq P hglf do Fhqwu lq Vklvz ulvhw klwru| lv dq rxvj urz vkr i vkdvvdn1Lkd yh wlvhg w frqvdfw pdq| irup hu uhlghqwr dgg vdi p hq iurp vkh hduvhw| hduv lq krshv ri revdlq lqj dv suhvlv d klwru| dv srwledn1Dv zrxg eh h{shfvng/ pdq| ri vkh

shrsch suhylrxvd dwrflvhw zlvk vkh surj udp kdyh sdwhg r q/ dgg r vkhw z huh qrwdech w uhp hp ehuh yhqwr ri pxfk frqvht xhqfh1Dv d uhvawp xfk ri vklv klwru| frp hv iurp p| rz q uhp hp eudqfhv dgg shur qdo h{shulghqf/ z klfk vdwlvng lq Dxj xw 4<971 L glg ilqg vrp h p hp rv dgg dwhw frqfhuqlqj vkh

hdud | hduv dagg glg vdon dwchaj vk
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xsrq vkh ehw
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z klfk z rxag adwiru r qh | hdu l lq
vkh vdp h | hdu/ vkh Vkuqhu Krsvlvd
iru Fulssdhg Fklaguhq lq
Vsulqj ilhag/ PD/ xqghu vkh
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dssuryhg iru r qh uhvghqw iru r qh
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Kdj j huw/ dssdhg iru d ihaz vks lq
rukrsdhglf v/ dagg vkh| z huh
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adwaj iru d shulg ri r qh w vkuh
| hdu l

Gxudj vkh 4<73v/ vkh
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Df hvr

Uhvghqw z runhg
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lhaz v frxag wdl
r qh | hdu z klh
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vp h/ Gu1 J d l Krxj k/ Vur z kr kdg
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z kr kdg uhsafhg Gu1 Vkrwud' dw
EFK dagg Gu1 J1 Hgp xqg Kdj j huw
dw Odkh| 1 Gu1 Vkrwud' d p xfk
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Vkrro lq Fdqr q/ z khuh Gu1 Sdxo
Qruw q/ vkh lqyhqwu ri vkh Qruw q
Eudf h iru vfr dvr l v/ z dv vkh fklhi 1
Gu1 Qruw q dvr ehfrph r qh ri vkh
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irup dad' dssuryhg el vkh Dp hulfdq
Erdug ri Rukrsdhglf Vxuj hul
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z lvk Vkh P dwdfkxvhw Krsvlvd
Vkrro kdylaj d fdhqvnd' vkdwz dv
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vnhq dw d q l dffuhg lq vvlvvr q
sox vkuh | hdu ri rukrsdhglf v/
glylghg lq vlv fdv ehvz hq Odkh|
z lvk r qh | hdu ri dgxw Vkuqhu ru
vkh P dw Krsvlvd Vkrro iru r qh
| hdu ri shgldvfv/ dagg EFK iru r qh
| hdu ri wdxp d1 Vkhuh z dv dvr d
shgldvfv urvvr q dw vkh Odnhyldh
Krvslvd z khuh fkurqlf frqglvvr qv
lq fklaguhq z huh vhdvng 1 Z khvku d

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Dv wdvng suhlyrxvd Gu1 Kdj jhuw z dv vkh iluw Surjudp Fklhi1 Gu1 Jhruj h Kdp prqg mlqhg vkh Odkh| Fdqf lq 4<86 dagg z dv qdp hg fkdulp dq ri vkh Rukrsdhglf Ghsdwp hqwdw Odkh| lq 4<8: 1 Gu1 Kdp prqg kdg wdlqhg dw vkh Xqlyhuwlv ri Plfklj dq dagg iluw z hqw w vkh Vdluh Fdqf lq Shqqv| qydqld1 Kh eurxj kw vshf ldo nqrz dngj h ri vkh edfn dagg vkrxagh/ dagg kh z dv dedv dvlwng el Gu1 Z laddug Grwuh/ z kr kdg dffrpsdq lhg klp iurp vkh Vdluh Fdqf lq SD1 Gu1 Grwuh sudfvfhg dw vkh Odkh| Fdqf dagg z dv dydohg vndfkhulq vkh surjudp iru 65 | hduw iurp 4<88 w 4<;: 1

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fawilfdvvrq ri hslsk| vhdj urz vk lqruhv/ z klfk avhu jdyh eluk w vkh Vdarhu fawilfdvvrq1 Lq velov z lvk vrph raghu phpehuw ri vkh Odkh| wdlv/ vkh| wdvng vkwvkh surjudp wdvng z lvk Gu1 Dlvnhq dv vkh suqf lsdv ruj dql}hu/ exw vklv dsshdw lqfruhfv l urp grfxp hqw vkwvL kdyh shvr qdaj vhhq/ DERV dssurydoz dv revdlqhg iru Surjudp &99 lq 4<83/ dagg vkh Uhlvghqf| z dv riilfdaj dvnng lq vkh DP D Gluhfwuj lq 4<841

Wz dugv vkh avh 4<83v/ Gu1 Ulfkdug Nlor| dh ehfdp h yhu lqyrqhg lq uhvghqf| wdlqlqj lq Erwrq/ z khq khz hqwr vkh Fduqh| Krsvlvdv Gu1 Nlor| dh udq vkh Fduqh| dagg vkh vz r fklaghq x krsvlvdv/ vkh P dv Krsvlvdv Vfkrro dagg Odnhytath Krsvlvdv dkrxjk Gu1 Qruwrq uhp dlqhg vkh vwxadu fklhi dwvkh avhu vz r krsvlvdv1 Gu1 Nlor| dh avhu z hqwrq w hvledvk d vhsdudv/ lqghshqhgqaw surjudp edvhg dwvkh Fduqh| Krsvlvdv xvlqj vkh P dv Krsvlvdv Vfkrro dagg Odnhytath iru klv shglvulf urvvrq v dagg ervk vkh Qhz Hqj adag P hglfdo Fhqvhu dagg Erwrq Flw Krsvlvdv iru dgglvvrqdo wdxp d dagg dgxav Vklv Fduqh| surjudp hyhqv daj phj hg lqwr vkh Vkiw Xqlyhuwlv surjudp lq 4<<3 z khq yluxv daj ddsurjudp v z huh uht xlvng w kdyh d xqlyhuwlv edvh1

Z klh vkh vlxdvvrq dw Odkh| z dv vledh lwz dv qrvvr dw EFK1 Gu1 Dlvnhq/ z kr kdg frph w Erwrq Flw Krsvlvdv lq klv avhu | hduw/ dhw vkwv srvlvrq lq 4<961 Vkhuh z huh vkhq d vhuhv ri lqvhu l fklhiv dw Flw Krsvlvdv iru vhyhudo | hduw/ lqf oxqlqj Gu1 Duwxu Vklterghdx ri Vkiw Xqlyhuwlv/ Gu1 Urehuw Xhkdhlq ri Ehvk Lvudho

Krsvlvdv dagg Gu1 Sdxo RxEuhq ri Fduqh| Krsvlvdv

Z klh frshudvvrq vkrxag kdyh ehq hvhqvldv vkh vxffhw ri vkh | rxqj surjudp / lqvnh udvvrq z dv ad{ dagg frpp xqlfdvvrq ehvz hqg vkh krsvlvdv fklhiv z dv plqlp do lq Surjudp &99 gxulqj vkh 4<83v dagg *93v1 Vkhuh z dv yluxv daj qrfurwryhu ri shvrqqhori vndfklqj / dagg vkh rqqd phvqlqj vkh| kdg lq frpp r q z huh vkrv lq z klfk vkh fklhiv phw w fkrrv uhvlgqaw1 Erwrq Flw kdg Vdvxugdl pruqlqj Judag Urxqgv w z klfk ddr ukrsdhglf vxujhrq z huh lqylvng/ exw vkh rqqd shvrq qrvxv daj dv Erwrq Flw/ z kr dvnngqhg vkhv/ z dv Gu1 Chdfk ri vkh Odkh| wdlv1 Gxulqj vkh plg093v lwz dv reylrxv vkwvkh surjudp dw Erwrq Flw z dv qrvgrlqj z hvd ehfdxv ri vkh avn ri dixavp h dndghu1 lq 4<9:/ Gu1 Fkdudv Zrrgkrxv ehfdp h vkh Fklhi dw Erwrq Flw Krsvlvdv dagg z kdvirax z hg vkh qh{w| hdu dagg d kdofrxag rqqd ehghvdehg dv vxpxaxrxv1 Ehfdxv ri uhfxulqj suredp v/ kh z dv dvnng w uhvjq dagg z dv uhsavfhg iru d shulrg ri

Gxulqj vkh plg093v lwz dv reylrxv vkwvkh surjudp dw Erwrq Flw z dv qrvgrlqj z hvd ehfdxv ri vkh avn ri dixavp h dndghu1

wp h el Gu1 Sdxo RxEuhq/ z kr vhsupduj diildvvrq z dv dw Fduqh| 1 Exw Gu1 RxEuhq dz dlv kdg d wvrqj diilqlw wz dugv Erwrq Flw Krsvlvdv dagg glg klv

ehwvrp dlqvdlq vkh vhuylfh1 lq Vsulqj ilhag lq 4<96/ Gu1 Nlv hv llvku ehfdp h Fklhi dwvkh Vkuqhuw Krsvlvdv vxffhglqj Gu1 Jduj Krxjk/ Vu1 Vkh Odkh| Fdqf wdlv z dv dxjp hqvng el vkh dgglvvrq ri Gu1 Z laddp Wuj huwrq lq 4<96 dagg lq avh 4<97 el Gu1 Urehuw Chdfk/ z kr fdp h gluhfvj rxwri vkh Qdy| w mlq vkh Fdqf lq 4<9:/ Gu1 Kdp prqg uhvng dv Fkdulp dq exw wdl hg r q w vndf k

dqg sudf wfh1 Gu1 Chdfk/ z kr wdlqhg dw vkh Xqlyhuwlv ri Plqqhvrval ehiruh jrlqj lqwr vkh Qdy| / z dv dssrlqvhg Fkdlup dq dw Odkh| 1 Lq vkh |hdw 4<8904< 3 vkh uhvghqwr urvdlr qv uhp dlqhg hvvhqvlada| vkh vdp h/ h{fhswwkdwlv vkh plg04<93v vkh urvdlr qv dwvkh Pdw Krsvlvdovfkrrodqg Odnhyldh z huf gursshg/ dqg dæ uhvghqwr z hqw w vkh Vkulqhuw iru vkhlu fklqghqwr wdlqlqj 1

Gxulqj 4<9: Gu1 Gdylg Vhj do dqg Gu1 J1 Ulfkdug Sdxori z krp pruh z læ eh z uwhng ævhu/ ehfdp h ihæz uhvghqwr/ dqg vkh| kdyh frqvlqhxg dq dvr fldvr q z lvk Surjudp &99 z klfk kv ævng lqwr vkh qhz plæhqqixp 1Gxulqj vkh 93v vkh Odkh| Fdqlf z dv nqrz q irulw uhrqvwxfvlyh vxuj huj z lvk vrp h hp skdvlv rq vkh frqglvrv ri vkh vsiqh dqg vkrxæghu/ z lvk Gu1 Kdp prqg ehqj z hæ uhj dughg dv dq dxvkrulv rq frqglvrv ri vkh vkrxæghu Gu1 Grvhu z dv ghyhæslqj d irrw dqg dqnd sudf wfh1 Gxulqj 4<9909:/ vsruw p hglflqh ehfdp h dq dvshfwri vkh surjudp z khq Gu1 Chdfk ehfdp h vkh ruksrdhglf frqvædqvur vkh Erwrq Uhg Vr{ dqg vndp grfwu iru vkh surihvr qdo vrffhu vndp / vkh Erwrq Ehdf r qv1

Lq Qryhp ehu 4<9</ d vlj qliifdqwp hhwaj rffxuwg z khq Gu1 Dæhuw l huj xvrq/ Mf vkh Suhvghqwrri vkh Dp hulfdq Erdug ri Ruksrdhglf Vxuj huj / pdgh d vz rgdl lqvshfwrv q ylvwrv Surjudp &991 Ri lqvhuwv klv idvku/ Dæhuw l huj xvrq/ Vuf kdg vhuvhg dv dq dvr fldv Surihvruri l udfvuh dqg Ruksrdhglf Vxuj huj dw Erwrq Flv Krsvlvdov gxulqj vkh 4<63v1 Vkh suvhqwr Gu1 l huj xvrq/ Mf z hqwr q w ehfrp h vkh Fkdlup dq dqg Surihvruri vkh Xqlyhuwlv ri Slwæxjk Ruksrdhglf Surjudp 1 Dw vkh frqfvrv ri klv ylvwrv Surjudp

Df hvr

&99/ kh lqirup hg Gu1 Chdfk vkwvkh surjudp frxæg qrw uhp dlq iuh wæqglqj z lvrwxw d xqlyhuwlv diildvrv q1 Kh vdlg vkwvkh Erdug z rxæg qrw dæz vkv lq vkh ixvuh1 Kh sursrvhg w Gu1 Chdfk vkwvkh hlvkhu jr w Vkiw Xqlyhuwlv ru w Erwrq Xqlyhuwlv dqg vkw vkh surjudp xqghu klv suvhqwr dhjlv z rxæg eh wæqvihuvg w vkw lqvrvrv q z lvk Gu1 Chdfk dv vkh Fkdlup dq1 Gu1 Chdfkæ fæwlv uhsvrqv w vkv z dv/ Ôfdq |rx gr vkwv

Iræz lqj vrp h qhjrvdlrv qv rq Md 4/ 4< 3/ Gu1 Chdfk dhiw vkh Odkh| Fdqlf dqg ehfdp h vkh Surihvruri Ruksrdhglf Vxuj huj dw Erwrq Xqlyhuwlv Vkrori P hglflqh dqg frqglvrv uru vkh l udfvuh Vhuylf h dw Erwrq Flv Krsvlvdov z lvk Gu1 Khqj Edqnv/ z kr kdg ehfrp h vkh qhz Fklhi dw Vkiw Xqlyhuwlv 1 Gu1 Z lædp Wfuj huwv vxfffhghg Gu1 Chdfk dv vkh Fklhi dw vkh Odkh| Fdqf 1 Erwrq Xqlyhuwlv suhylrvv kdg qr dfdghp lf ru uhvghqf| ruksrdhglf surjudp 1 Vkh| glg kdyh vvhudo

sudfvrv qhuw z kr xvhg vkh krsvlvdov dqg z kr udq rqh fdqf/ z klfk z dv vkh h{vngw ri vkh p hglfdo vkrro vndfklqj dw vkh vlv h1 Vkh dfvlqj khdg/ Gu1 Mvhsk Nrshæz dv d exvl vxuj hrq z kr glg prwvri klv z run dw Ehvk Lvudho Krsvlvdov Gu1 K1 Vdnhædulghv/ z kr glg sulp dud kdaq vxuj huj / kdg d exvl sudf wfh dqg uhp dlqhg iru p dql |hdw1 Lq hduj Md 4< 3/ Gu1 Fkdvuv Juhj r u ri vkh DERV ylvvhg XK dqg EFK dqg jdyh dssurydo iru vkh qhz Surjudp &99 edvhg dw Erwrq

Wkhsurjudp frxæg qrw uhp dlq iuh wæqglqj z lvrwxw d xqlyhuwlv diildvrv q1 Mf Iræz lqj vrp h qhjrvdlrv qv rq Md 4/ 4< 3/ Gu1 Chdfk dhiw vkh Odkh| Fdqlf dqg ehfdp h vkh Surihvruri Ruksrdhglf Vxuj huj dw Erwrq Xqlyhuwlv Vkrori P hglflqh

Xqlyhuwlv Vkrori P hglflqh1 D uhyh z ri sdwklwrv uhyhdv vkwv gxulqj vkh 4<63v dqg *73v/ Gu1 Orw Krz dug kdg ehq vkh Khdg ri Ruksrdhglfv dw Erwrq Xqlyhuwlv/ exwvrv hkrz vkh ghsdvp hqwkdg glvdsshuhg1 Krz hyu/ vkhuh kdg qhyu ehq d wdlqlqj surjudp ri dqj vrw

Iræz lqj Gu1 Z rrgkrxvhæ xqæp hqvhg ghsdvvuh iurp Erwrq Flv dqg Gu1 Rædvhææ hiiruw dw kræglqj vkh surjudp wj hvkhu d wlvxpylvv duvhg/ Gu1 Khqj Edqnvri Vkiw Xqlyhuwlv >Gu1 Chdfk ri Erwrq Xqlyhuwlv > dqg Gu1 Eduw Txlj dh| iurp vkh Kduydg Vxuj l fdo Vhuylf h1 Gu1 Txlj dh| z dv d J hqhuo Vxuj hrq z lvk dq lqvhuwv lq iudfvvuhv dqg vsruw lqvhuv1 Vkhvh frqglvrv uru uhexlvwkdvhuylf h lqwr d vrxæg dfdghp lf surjudp 1 Uhvghqwr iurp EX/ Vkiw/ dqg vkh Fduqj| Krsvlvdovæur vvhng vkrxjk vkh Erwrq Flv Krsvlvdov

Vkrwæ divhu klv dssrlqv hqwdv Fkdlup dq dw Erwrq Xqlyhuwlv dqg frqglvrv uru dw Erwrq Flv/ Gu1 Chdfk z dv dz dughg vkh DRD Dp hulfdq/ Eulvkv/ Fdqgdldq Wdyhdaj l hæz vks dqg lq vkh vsulqj dhiw iru vl{ z hhnv1 Vklv z dv srwledh ehfdxvh Gu1 Lvdrgh \ deaq iurp Prqwhdov Fdqgd/ mlqhg vkh EX idfxæv 1 Vkh ihæz vks hyhqvædæ suryhg w ehrij uhdwydæw vkh surjudp ehfdxvh Gu1

Chdfk z dv lq glvfw frqvæfv z lvk vrp h ri klv XVD shuw z kr z rxæg ehfrp h vkh ixvuh dhghw ri Dp hulfdq Ruksrdhglfv/ dqg lwdov surylghg nqrz dhgh ri dqg frqvæv iurp vkh Eulvkv Lvdrv1

Gu1 \ deaq/ z kr z dv vnhlqj ryhu vkh uhlqv vkrwvhu / kdg d

sulp dū lqvhuhw lq wdxp d/ sduwfxadu dand iudf vxuh dāg lq edvlf uhvhdufk frqfhuqlaj dūwfxadu fduwādj h ghj hghudv r q1 Dār Gu1 J Ulfkdug Sdxo kdylaj ilqlvkhg klv uhvghaf| ehfdp h d ixæ wlp h wāli p hp ehuz r unlaj dw EFk dāg Xqlyhuwlv Krsvlædo saxv z r unlaj z lvk vkh P dwdfkxvhw Fulssdhg Fklæghqæ Surj udp z lvk Gu1 Dūwkuu Sdssdv ri Fklæghqæ Krsvlædo Gu1 Sdssdv vrrq dhiwvkhuh w ehfrp h vkh Fkdulp dā ri Ruwksdhglfv dw vkh qhz Xqlyhuwlv ri P dwdfkxvhw P hglfdo Vkrro lq Z rufhwut Mz lvk P hp rudo Krsvlædo ehfdp h r qh ri vkh EX qraqūhvghqwd diildvhw/ z lvk Gu1 \ deāq ehfrp lqj fklhi vkhuh1 Vsr uw P hglflqh dāg d fdsvlyh sdwhqw srsxæw r q z dv ixuwku hākdqf h g e| vkh dgglw r q ri Qruwkhdwuhu Xqlyhuwlv dūwchwf vndp v saxv vkh vndp v dw Ehqvdh| Fræjh dāg ævhu r q vkh Erw r q Xqlyhuwlv dūwchwf vndp v1 l xuwku exlæglaj Vsr uw P hglflqh rffxuw h g z khq Gu1 Chdfk ehfdp h vkh Erw r q Fholfv ruwksdhglf frqvxæd qw lq 4<9/ d sr vlv r q z klfk kh wrn z lvk klp w EX1

Gxulaj vkh | hdu 4< 404< 7/ Surj udp &99 uhp dlqhg wædch1 Fævhu vhw z hū ghghæshg ehvz hāq XK/ EFk/ dāg Fduqh| Krsvlædo z krvh ruwksdhglf vhuylf h z dv gluhfv h g e| Gu1 Ulfkdug Nlār| dh1 Fduqh| uhvghqw urvævhg dw ervk XK dāg EFk1 Gxulaj vlv shulg vkh ruwksdhglf uhvghaf| wædlqaj frqvlv h g ri d r qh | hdu lqvhuqvkl s/ r qh | hdu ri j hghudovxuj hū wædlqaj dāg vkuh | hdu ri ruwksdhglf vxuj hū wædlqaj 1 Vkh lqlwdo v r | hdu frxæg eh vshqw dw dā| dssuryh g krsvlædo ri vkh uhvghqæw fkr lfh1

Lq 4< 7/ vkh flv ri Erw r q ghfh h g vkwir u dgp lqlwædvlyh dāg ilqdqf ldo uhdv r qv r qd r qh p hglf do Df hvr

vkrro zrxæg eh diildv h g z lvk Erw r q Flv Krsvlædo Vkh vkuh vkrro lq sæfh z hū dv h g w vxep lwsur sr vdo1 Kduy dūg P hglf do Vkrro v h qwd dhwuh edvfdā| wævlaj vkw Ôkh| z hū Kduy dūg/ Õ dāg vkuhiruh vkh| vkrxæg eh fkrvhq1 Vkiw Xqlyhuwlv vxj j h v h g vkw vkh vkuh vkrro v| w h p z dv z r unlaj z hæ dāg vkrxæg eh dhiw lq sæfh1 Erw r q Xqlyhuwlv æ Ghda/ Gu1 Hskudlp luhgp dā/ suhv h g v h g d ghvædh g sursr vdo dv w z k| EX vkrxæg eh vkh p hglf do vkrro ri fkr lfh iru Erw r q Flv Krsvlædo Erw r q Xqlyhuwlv z dv v h d f v h g w gluhfv Erw r q Flv Krsvlædo Grfwuw Edqnv dāg Txlj dh| kd g w dndy vkh ruwksdhglf vhuylf h lq vkh kdqgv ri Erw r q Xqlyhuwlv 1 Gu1 Edqnv kd g gr qh d vxshue me ri gluhfv lqj vkh vhuylf h/ dāg ehiruh kh dhiw kh fdxvr qhg Gu1 Chdfk vkw Erw r q Xqlyhuwlv z rxæg kd y w ilqg dqr vkuh w dxp d vhuylf h ehfdxv kh ehdh y h g vkw Erw r q Flv z dv lq vxfk edg ilqdqf ldo vkwsh vkw lw z rxæg vrrq fæv h1 Krz hyu/ Erw r q p dlru/ Nhylq Z klv/ ghflgh g vkw EFk z rxæg qrw fæv h gxulaj klv v h q x u h/ dāg EFk wælv h g d j udg x do exlæglaj surj udp ri vndulaj grz q ræg exlæglaj v dāg uhsæflaj vkh p z lvk qhz r qh v/ z klfk kd v frqvlv h g lq w vkh 54wv h q v x u j 1 Vkh v r | hdu/ 4< 704< 9/ z hū y h u w x j k l q v h u p v r i vkh qhz surj udp ehfdxv vkh wāli dw XK dāg EFk z dv v h u l r x v d g h s d v h g 1

Lq 4< 7/ z lvk p xfk xuj lqj iurp Gu1 \ deāq/ vkh ruwksdhglf gh s d u p h q w r i i l f h v z hū p r y h g iurp vkh ræg Suhw r q Exlæglaj 0 d irup hu Kr d g d| Lq iru H{ v h q h g Fduh Õ w vkh jurxqg iæru ri Xqlyhuwlv Krsvlædo lq vsdfh suhylr xvd rffxslh g e| vkh Hp huj h qf| Urrp 1 Vkh vsdfh lqfægh g d f d g h p l f r i i l f h v/ v h f u h v æ l d o v s d f h/ dāg d v p d æ

frqihuhqfh urrp 1 Gu1 \ deāq dār vdz klv sdwhqw vkuh/ dækrxj k r vkuh wāli p hp ehuz frqvlv h g w v h s d w h q w l q v k h G r f w u w R i i l f h E x l æ g l a j 1 D w v k h v d p h v i p h v k h g h s d u p h q w k d g e h f r p h v r e x v l v x u j l f d ā | v k d w l w z d v d æ r f d v h g d ā l q s d w h q w r u w k s d h g l f i æ r u d ā g v z r i x æ w l p h s k | v l f d o v k h u d s l w z z k r z r u n h g h { f æ v l y h d } z l v k r u w k s d h g l f s d w h q w r q v k d w i æ r u l

Lq 4< 7/ Gu1 Chrq Nuxj hu vxffhghg Gu1 llvkuh dv Fklhi ri wāli dwvkh Vkuqhu Krsvlædo z khq Gu1 llvkuh vxiihuhg d wæv h/ z klfk uht xlh g klp w uhv h u h 1 F r q f x u h q v d d ā g d v v k h u h v x o v r i l q v h u h v l a j g l v f x w l r q v d ā g k d u g f r u h q h j r w d v r q v e h v z h h q G u 1 C h d f k d ā g G u 1 N u x j h u / E r w r q X q l y h u w l v r u w k s d h g l f u h v g h q w z h u h v h q w w E d | W æ v h P h g l f d o F h q v h u l q V s u l a j i l h a g i r u d v l { p r q v k u r v æ v r q l q d g x o w d ā g w d x p d 1 V k h u h z h u h p d m u p l v j l y l a j v r q v k h s d u w r i v r p h r i v k h E X w ā l i / z k l f k g l g q r w e h d h y h v k d w v k h E d | W æ v h P h g l f d o F h q v h u u r v æ v r q z d v d j r r g l g h d 1 K r z h y u / z l v k v k h d w r f l d v r q e h v z h h q G u 1 N u x j h u d w V k u l q h u d ā g d w E d | W æ v h / d ā d f f r p p r g d v r q z d v u h d f k h g 1 l q v h u h v l a j d / r y h u v k h | h d u / E d | w æ v h s u r y h g w e h d i u x l v i x o d g g l w r q w v k h s u r j u d p 1 V k h u h v g h q w d f f x p x æ d v h g d j u h d v g h d o r i v x u j l f d o h { s h u l h q f h z l v k v x f k p h q d v K r z d u g F u d z i r u g d ā g M k q G h Z h h v h d ā g z h u h h { s r v h g w g l i i h u h q w v k r x j k w d ā g v x u j l f d o s u r f h g x u h v 1 G x u l a j v k l v w l p h v k h O d k h | u r v æ v r q u h p d l q h g h v h q v d æ d v k h v d p h / z l v k d ā h p s k d v l r q u h f r q w æ f v l y h v x u j h u j 1

Lq 4< 9/ vkh surj udp qhghg qhz hghuj h w f / d w h q g l a j v x u j h r q v d ā g k h æ d w E r w r q F l v 1 V k h w l p l a j z d v s h u h f w i r u d S u r j u d p & 9 9 j u d g x d v h / G u 1 G d y l g V h j d d w u h v u q w E r w r q 1 G u 1 V h j d o k d g e h h q z r u n l a j l q l u d h o d i v h u

ilqlvklaj klv uhvghqf| dgg z dv
σrnlaq irud vnp srudl srvlvrq lq
vkh Xqlvng Vvlnv1 Dgydqfhp hqwlq
vkh Lvudhd Dfdghp lf v|vnp z dv
qrwulrxvd vσz dgg vkh ehdi z dv
vkdwk frxqg ehvnu klv dfdghp lf
uhvxp h khuh irud ihz |hdw ehiruh
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ri vkh Ghsdwp hqwdwEFK z khuh kh
z dv d vxshue dndghu dgg vndfkhul

Vklv vnp srudl
srvlvrq advhg qlqh
|hdw1 Vkh glvqlfvyh
dndghu kls v|dv ri
Gu1 Chdfk dgg Gu1
Vhj do irup hg dq
lqvuhvqlaj frqvadw1Lw
z dv uxp r uhg vkdwGu1
Vhj do kdq judgxdvhg
iurp vkh Ô haj klv
Nkdq Vkrro ri
Glsσp df| Ô dgg Gu1

Chdfk z dv pruh iurp vkh Eulvkk
Srdvñ Vkrro ri Glsσp df| 1 Vkh
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lq vñup vri vklaj v dffrp sdvkhg iru
Surj udp &991

Vkh 4< 3v z lvqhwng Ô iru
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Erwrq Ruksrdhglf Surj udp v/ soxv
d vndg| srvlvlyh ghyhσsp hqwr i
Surj udp &991 Vkhuh z dv d fσvh
z runlaj uhadvr qvklz z lvk uhj dug w
uhvghqf| wdlqlaj z lvk Gu1 Khqj
Edqnv dw Vkiw dgg Gu1 Khqj
Pdqnlq dw P dwdfkxvhw J hqhudo
Krvslvdō Erwrq Xqlyhuwlv
Ruksrdhglfv sduvlsvdhg lq dq
Ruksrdhglf Sdvkrσj| Frxwh dgg
d Survkhvfv Frxwh lq Erwrq hdfk
|hdw1 Gu1 Nuxjhu udq vkh advnu
frxwh/ z klfk z dv z hσuhj dug h1

Iru EX/ fdqlf do diildvvrq
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lq vkh Qhlij kerukrrg Khdolk
Fhqvnuw lq Hdw Erwrq dgg
Ur{exu1 Gu1 J hrj h Z klvñdz / d
irup hu uhvghqf z dv khσixo lq
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Df hvr

**Vkhruksrdhglf
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vrffhu vndp v1**

Vkh ruksrdhglf ghsdwp hqw
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Plqxvnp hq dgg
Vhd Phq/ dgg vkh
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Chdfk dgg Vfkhsvlv
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sk|vflidqv iru vkh
Erwrq Euhdnuw ri
vkh vkruw dyhg XV
Irrvædō Chdj xh1

Vkh XV Vhqqlv Fkdp slrqvklz
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Orqj z rrg Fulfnhw Foxe j dyh
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Erwrq Srdfh dgg Erwrq Iuh
ghsdwp hqwr1

Vkh jurz vk ri vkh
Ruksrdhglf Wdlqlaj Surj udp dw
Erwrq Xqlyhuwlv dgg Erwrq Flv
Krvslvdō lq vkh *3v dwdfvng
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dp r qj w z krp z huh Gu1 J hrj h
Z klvñdz / Gu1 Dqvrq| Vfkhsvlv/

Gu1 Plfkdhō Fruehw dgg Gu1
Z lōdp Fuhhy| dōri z krp wdlqhg
lq Surj udp &99 dgg z hqwr q w
vhuvh dv dvhqglaj sk|vflidqv iru
p dql |hdw1 Gu1 Vfkhsvlv frqvqxhg
w vhuvh dv vkh Gluhvrw ri Vsruw
P hglflqh lqwr vkh 54wfhqvxu1 z lvk
Gu1 Fuhhy| dw EFK1 Gu1 Vñskhq
Z dvlhz vñl dgg Gu1 Ehuqduq Silhihu
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Vkhuh z dv d vp dō edlv
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gluhfvng e| Gu1\ deσq lq vkh 4< 3v
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vkh hiifw ri vkh v|qrylxp r q
fdvvdaj h ghvñur udvvrq1 Kh uhf hlyhg
vp dōdp rxqw ri ixqglaj iurp vkh
QLK exwgxh w adfn ri ixqgv dgg w
vrp h{vñqwlip h/ vkh uhvdufk qhyhu
uhdō survshug ghvsvñ Gu1
\ deσq v hduqhwhiiruw1

Lq vkh advñ 4< 3v/ vkh DERV
fkqaj hg lw uhtxlup hqw iru
ruksrdhglf uhvghqwr w r qh|hduri
jhqhudo vxj hū dgg irxu ri
ruksrdhglfv1 Vkh EX uhvghqwr
urvvrqv z huh 45 prqkv dw
Xqlyhuwlv Krvslvdō 45 prqkv dw
EFK/ qlqh prqkv dwVkulqhu/ qlqh
prqkv dwOdkh| / dgg vl{ prqkv dw
Ed| Vvln P hglf do Fhqvnuw Vkhvh
fdqlf dōurvvrqv uhp dlqhg frqvvdqv
xqvodssur{lp dvñd 4<<8/ z khq vkh
irxu|hdw ri ruksrdhglfv fkdaj hg
w 57 prqkv dwVkh Erwrq P hglf do
Fhqvnuw/ z klfk z dv frpsulvhg ri
EFK dgg XK/ dgg 45 prqkv dw
Odkh| / vl{ prqkv dwVkulqhu/ dgg
vl{ prqkv dwvkh Erwrq Yhvudqv
Dgp lqlvudvvrq Krvslvdō Vkh advnu
z dv pdqgdvhg e| vkh EX Ghdq/

z klfk unt xlung gursslaj vkh Edl
Vdvh P hglfdo Fhqvnu iurp vkh
uhvghqaw urvdvrqv1 Vkh YD kdg
ehfrp h d aduj hufrj lq vkh p hglfdo
vwxghqvwvndfklaj fxuulfxoxp / z klfk
w vrp h h{vhwirufhg vkh Ghdaq
kdqg1

Lq vkh hduj 4< 3v/ vkh EX
Rukrsdhglf ghsdup hqw riilfhv
z huh uarfdvng iurp vkh XK iluw
isaruw vkh Grfwuw Riilfh Exlajlaj
+GRE, r q vkh ; vk isru1 Vklv z dv
ervk iru vkh fdghp lf riilfhv d qg
z khuh d o sdvhqaw z huh vhhq1
Vkrwaj divnu vkdwxh p dlq d w Gu1
\dearq hiiruw d udgrarj | xqlw
z dv dgghg w vkh rukrsdhglf
ghsdup hqw z klfk lpsuryhg
sdvhqaw fduh d qg vhuylfh1 Vklv
dvhqhg vkh vlp h z dlvaj iru
grfwuw d qg sdvhqaw d qg surylghg
vrp h ilqdqldo uhlp exwhp hqv1
Gxulaj vlv shulrg vkh Odkh| Fdqf
kdg pryhg iurp vkh Nhqpruh
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P dvdfkxvhw/ z khuh lwfrp elqhg
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krvslvdo lqwrqh fdp sxv1 Vkh|
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w lw suhylrxd klj kd uhj dughg
h{shulwh lq uhfrqwxvfyh vxuj hu1

El vkh 4< 3v vkh Vsruw
P hglflqh vhwvraq ri Surjudp &99
z dv grlaj yhu1 z haal Gu1 Dqvrqj
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rukrsdhglf vdi/ d qg kh surylghg
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p hglflqh el dvxp lqj d p dnu ur d
dw vkh Erwq Xqlyhuwlv Dvkhvlf
Ghsdup hqv1 Odvnu r q lq 4<<4/ Gu1
Vfkhslv z dv mlqhg el Gu1 Wp r vk|
lrvnu/ z kr kdg klv lqlvdo frqvafw
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d irrvedo sadhu dw Erwq
Xqlyhuwlv 1 Kh j udgxvng iurp EX
P hglfdo Vkrro d qg iurp vkh EX
uhvghqaw vadlqaj surjudp ehruh
mlqlaj vkh ixo vlp h vdi1 P xfk
advnu lq 5339/ vkhvh hiiruw z rxog eh
uhz dughg el d vsruw p hglflqh
Df hvr

frpsdh{ r q vkh Erwq Xqlyhuwlv
xqghj udgxvng fdp sxv1 Gu1
Z l adp Fuhyl mlqhg vkh
ghsdup hqw durxqg vlv vlp h d qg
surylghg er vk fdqf doh{shulwh d qg
dgp lqlvduvlyh vnlv1 Kh z hqwr q w
hduj d P dvnu ri Vlhqfh lq Khdak
Fduh P d qj hp hqw z klfk frqvaxhv
w ehqilw er vk vkh Rukrsdhglf
Ghsdup hqw d qg Erwq P hglfdo
Fhqvnu1

Gxulaj vkh 4< 3v/ vkh Odkh|
Fdqf frqvaxhg w eh qrvraq d qg
lqvng udosduwexwd p dnu sdvhu lq
Surjudp &991 Vkh fdqf kdg pryhg
w Exudaj w q z khuh Gu1 Z dlvz vnl
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rukrsdhglf vsldo vxuj hu1 vhwvraq1
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Odkh| / d qg Gu1 Z dlvz vnl z dv
qdp hg dv Fkdlup d q1 Kh uhvulvng
Gu1 Z l adp Kh d iurp Mkqv
Krsnlqv lq 4< 8/ z kr duylhg z lvk
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p d qj hp hqw gxulaj
vkh 4< 3v d qg 4<<3v1

Iurp 4< 9/
d qg advaj d ghfdgh/
vkh r qd frqvawq iurp
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Lq 4< 9 Gu1 Vhj dohiwEFK w uhvux
w Lvudh z khuh kh uhfhlyhg d
vij qlilfdqw Rukrsdhglf
Fkdlup d qvks1 Kh z dv uhsafhg dw
EFK dv Gluhvru ri Rukrsdhglf
Vxuj hu1 el Gu1 Jhrj h Z klvntz 1
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ehqilwvkh surjudp sdulfxadud vkh
uhvghqaw vndfklaj / z lvk klv aduj h
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uhvghqaw d fkdqfh w z dvfk d qg
sulfvfh jrrg rukrsdhglf vxuj l f do

vhwkqlt xh1 Gxulaj vkhvh | hdu Gu1
Chdfk/ z klh fdqf daj yhu1 dfvlyh dw
XK z dv exv| dz dl iurp Erwq
ehlaj qdp hg dv Khdg Sk| vfl d q iru
Vkh XVD Rdp slf vndp iurp 4< 3
vkrxjk 4< 7 d qg w vkh XV
Rdp slf Frp p lwhh dv Fkdlup d q ri
Vsr uw P hglflqh d qg Vsr uw Vlhqfh/
4< 804<<61 Kh z dv dssrlqvng w vkh
DERV lq 4< 7 iru 43 | hdu/ gxulaj
z klfk vlp h kh z dv vkh Vhdvuhu
d qg r q vkh H{hf xvlyh Frp p lwhh1

Lq 4< </ Gu1 Chr q Nuxj hu
uhvuhg dv Fklhi Vxuj hr q dw vkh
Vkulqhw Krvslvdo d qg kh z dv
uhsafhg el Gu1 Mkq Urehuw/
irup hu1 Surihwrud qg Fkdlup d q dw
Eurz q Xqlyhuwlv d qg ehruh vkw
Fkdlup d q ri vkh Ghsdup hqw dw
Qhz Rudhqv Fklaguhq Krvslvdo
Vkh Vkulqhw Krvslvdo z dv ehvaj
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Gu1 Urehuw uhvuhg iurp Vkulqhw lq
4<< / kh z dv uhsafhg el Gu1 Gdylg
Guyduf z kr kdg ehq vkh vhwvraq lq
frp p d qg iru p d q | hdu d qg kd v
surylghg rajrlaj rxvwdqglaj
dhdghwks1

Gxulaj vlv vlp h vkhuh z dv
dj uhdwghdori exlajlaj dw
vkh Erwq Xqlyhuwlv
P hglfdo Fdp sxv
lqfoxglaj d frpsdhvnd
qhz krvslvdo fdahg vkh
Dvxp Exlajlaj dw
Xqlyhuwlv Krvslvdo d qg d
qhz lqsdvhqwidlv dw Erwq Flv
Krvslvdo lq 4<<3/ Gu1 Z dlvz vnl
dhiw vkh Odkh| Fdqf iru sulydvh
sulfvfh lq Vxq Ydvh| / Lgdkr/ d qg
Gu1 Z l adp Kh d z dv dssrlqvng
Fkdlup d q ri vkh ghsdup hqwdvkh
Odkh| Fdqf > Gu1 Kh d eurxjk vw
derxw vxewdqvdo uhylvd} dvraq ri
vkh Odkh| Rukrsdhglf Ghsdup hqv1
Gxulaj klv vhwvuh vkh Odkh|
Ghsdup hqwj uhz w ehfrp h d aduj h
p xatvshf l d aj jurxs z lvk vxe0
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kdv hqkdqf hg vkh fdqfdo vndfklaj ri Surj udp &991E| 4<<</ Odkh| kdq vxevshf lday jurxsv lq mlqw uhsafhp hqw +Gu1 Khdd/ Lrur,/ kdqg vxuj huj +Gu1 P d j d v/ Jxp dh/ Ndvduj dq,/ vsldovxuj huj +Gu1 Silhihu,/ vsruw p hglflqh +Gu1 Zlon/ Chp rv/ Vp l dh|,/ ruwksdhglf vwxpd +Gu1 Gxeh,/ dqg irrwdqg dqndv xuj huj 1

Vkh Odkh| uhvdufk zrun irfxvhg rq vnfkqltxhv ri wvdo mlqw duwkur s d w y/ w h d v p h q w r i g l i i l f x o v i u d f v x u h v/ r x w r p h v w x g l h v/ d q g h y d o x d w r q r i k r v s l v o f r w w l q r u w k s d h g l f v 1 V k r u w d i v n u e h f r p l a j F k d l u p d q d w O d k h | / G u l K h d d z d v v h d f v n g d v r q h r i v k h i l u w M l s d q h v h R u w k s d h g l f D w r f l d w r q W d y h d a j i h a z v e j v k h D p h u f d a j D f d g h p | r i R u w k s d h g l f V x u j h r q v 1 + V k h f r r u g l a d w r q d a g v h d f w r q r i N R D i h a z v z d v p r y h g i u r p v k h D D R V w v k h D R D l q 4 < < < 1, W k l v z d v d q l p s r u w d q w k r q r u i r u v k h O d k h | G h s d u w p h q w d a g i r u S u r j u d p & 9 9 1 V x e v h t x h q v d l q 4 < < / d q r v k h u O d k h | s k | v f l d a j / G u l L r u r / u h f h y h g v k h N R D W d y h d a j l h a z v k l s 1

Lq Qryhp ehu 4<<5/ Gu1 Chdfk w ag Ghda Dudp Fkredqldq vkw kh zlvkhg w uhvj q dv Fkd lup dq1 Vkh Ghda/ krz hyhu/ dvnhg klp w w d l r q z k l d h v h d u f k i r u k l v v x f f h w r u z d v e h j x q 1 D q r x w l g h v h d u f k g l g q r w i l q g d v x l v e d h f d a g l g d w n / d a g l q 4 < < 7 G u l l v d g r u h \ d e a r q z d v q d p h g d v l q v n u l p F k l h i r i v k h R u w k s d h g l f G h s d u w p h q w d w E X 1 K h f r q v l q x h g l q v k l v s r v l w r q x q v o P d l 4 < < 1 L q v k h p l g 0 4 < < 3 v / X q l y h u w l y K r v s l v o d a g E r w w q F l w y K r v s l v o p h u j h g w i r u p V k h E r w w q P h g l f d o F h q v n u / z k l f k z d v v k h i l u w p h u j h u r i d s u y d v n d a g p x q l f l s d o p h g l f d o i d f l d y l l q v k l v d u h d 1 V k h d u d a j h p h q w z r u n h g i d u e h w n u v k d q p d a j s h r s d h k d g s u h g l f v n g d a g D f h v r

fr qv l q x h g w e h v x f f h w i x o x q v o v k h i l q d q f l d o z r h v r i P h g l f d l g d a g P h g l f d u h s h u l w n g d i v n u v k h 5 3 3 ; g h e d f d h 1 G u l Z l a d p F u h y | / k d y l a j u h f h y h g k l v P d w n u r i V f l h q f h l q K h d o k F d u h P d a d j h p h q w e h f d p h v k h F k l h i d w E F K l q 4 < < 9 d a g d f v n g d v Y l f h F k d l u p d a g i r u F d q l f d o D i i d l w i r u v k h g h s d u w p h q w l Q h z r i i l f h v z h u h d f t x l u n g d w v k h E F K f r p s d h f r p s d h w l a j v k h p r y h i u r p v k h e d v h p h q w r i v k h V k r u w n o x q l w z k h u h G u l E d q n v / T x l j d h | / d a g C h d f k k d g r u l j l a d a j z r u n h g w G u l V h j d o w 8 v k i a r u r i i l f h v l q v k h D p e x a d w u j F d u h F h q v n u w v k h s u h v h q w v s d f h r q v k h v h f r a g i a r u r i v k h G r z d a j E x l a g l a j d w E r w w q F l w y K r v s l v o d

Lq vkh plg 4<<3v/ vkh Yhvudqv Dgp lqlwudwv q Krvsldo lq Mlp dld Saldq z dv sxwxqghu vkh dhjlv ri vkh Erwwq Xqlyhuwly P h g l f d o F h q v n u / d a g l w z d v g h v n u p l a h g v k d w v k h r u w k s d h g l f v h u y l f h z r x a g f r p h x q g h u v k h g l u h f w v x s h u y l v r q r i v k h E r w w q X q l y h u w l y g h s d u w p h q w l W k l v s u r j u d p k d g s u h y l r x v d e h q x q g h u v k h g l u h f w r q r i V k i w / d a g v k l v f k d a j h r i g l u h f w u k l s k d g e h q g h a l h g i r u v h y h u d o | h d u e x w z d v h y h q w d a j l p s d h p h q v n g e j v k h q h z r u w k s d h g l f f k d l u p d a g d w E r w w q P h g l f d o F h q v n u 1 V k h d i i l d d w r q z l v k v k h Y h v u d q v K r v s l v o q h f h w l v d v n g v k h v n u p l a d w r q r i v k h u h a d w r q v k l s z l v k E d | V a l v n P h g l f d o f h q v n u l q V s u l a j i l h a g / z k l f k k d g z r u n h g z h a o i r u 5 3 | h d u 1 G x u l a j v k l v s h u l r g / j u d g x d v n v r i S u r j u d p & 9 9 / G u l J 1 U l f k d u g S d x o G u l D q v k r q l V f k h s l v / G u l Z l a d p F u h y | / d a g G u l W p r v k | l r w n u f r q v l q x h g z r u n l a j d a g s u r y l g l a j d h d g h u k l s i r u v k h u h v l g h q w v n d f k l a j 1

Vkh prw vij qilfdqw ghyhosp hqwlq Surj udp &99 vlfh vkh uhr uj daj} dwv q l q M d 4 < 3 z d v

vkh dssrlqvp hqwr i d q h z S u r i h w r u d a g F k d l u p d a g r i v k h G h s d u w p h q w r i R u w k s d h g l f V x u j h u j d w E r w w q X q l y h u w l y V f k r r o r i P h g l f l q h l q P d l 4 < < 1 G u l W k r p d v H l q k r u a j f d p h w E X i u r p v k h P r x q w V a d l V f k r r o r i P h g l f l q h l q Q h z \ r u n F l w y d a g d a r a j z l v k k l v f d q l f d o v n l a o / e u r x j k w z l v k k l p d w w r a j e d f n j u r x a g l q e r v k d g p l a l w u d w r q d a g e d v l f v l h q w l i f u h v d u f k 1 Z l v k l q v k h i l u w f d d h a g d u | h d u v k h g h s d u w p h q w k d g p d a j s r v l w y h f k d a j h v l a f o x g l a j d g h s d u w p h q w o s u d f v l f h s a d a j d z h a o i x a g h g e d v l f u h v d u f k s u r j u d p / d a g j u h d v d h { s d a g h g d a g p r g h u a l } h g r i i l f h v r q v k h ; v k i a r u r i v k h G R E 1 R i l q v n u h w w G u l H l q k r u a j z d v d i r u p h u D p h u f d a j / E u l w k / F d a d g l d a j W d y h d a j l h a z z / z k l f k p h d a q w k d w e r v k s h u p d a h q w F k d l u p h a r i v k h G h s d u w p h q w k d g z r q v k l v k r q r u l Z k h q k h f d p h w E r w w q X q l y h u w l y / G u l H l q k r u a j z d v d a j D w r f l d w n H g l w u r i v k h M i x u a d o r i E r q h d a g M l q w V x u j h u j / d a g k h z d v a d v n u h d f v n g S u h v l g h q w r i v k h R u w k s d h g l f U h v d u f k V r f l h v y 1 L q v k h | h d u v l a f h k l v d s s r l a q v p h q w v k h e d v l f u h v d u f k g l y l v r q k d v u h f h y h g p d a j p d m u j u d a w i u r p v k h Q L K d a g r v k h u i x a g l a j r u j d a j } d w r q v d a g p x f k d f f a d l p i r u l w z r u n 1 W k l v z d v g x h w v k h g l u h f w h i r u w r i G u l H l q k r u a j 1

Lq 4< < / d a j r u w k s d h g l f d e u d l a f d v n g d w v k h E r w w q F l w y K r v s l v o f d p s x v z d v i x a g h g v k u r x j k d g r a d w r q e j v k h C h d f k i d p l d d a g d x j p h q v n g e j f r q v l e x w r q v e j v k h E X R u w k s d h g l f D o x p q l D w r f l d w r q 1 G u l J 1 U l f k d u g S d x o k d g i r u v r p h | h d u e h q v k h r u j d a j } l a j i r u f h e h k l a g v k h D o x p q l D w r f l d w r q d a g z d v v k h n h | i l j x u h l q v k l v i x a g l a j h i i r u w 1 W k l v p d g h l w s r v l e d h w z h a o w r f n v k h d e u d l 1 L q 4 < < / v k u r x j k v k h C h d f k i d p l d / i x a g g v z h u h g r a d v n g w h w a l e d v k v k h C h d f k

Ylwlwqj Surihwrwklis dagg Gu1 Fkdudhv Urfnz rrg ri Vdq Dqwrqlr/ Wlf{dv/ ehfdp h vkh iluw jxhww dfrvxuhulq vkhidæori 4<< 1

Dqr vkhup dnu fkdqj hfdp h derxw lq 4<<: z khq Gu1 Hlqkr uq shuxxdghg Gu1 Sdxo Wf uqhwd w frph iurp vkh Qhz \run Flw2Eurndq duhd w dwxp h vkh srvlwr q ri Fkhi dw Erwrq Flw Krvslvdo dagg Ylfh Fkd lup dq iru Dfdghp lf Diidluw1 Gu1 Wf uqhwd dagg klv wlii kdyh uhvwuhg vkwkrvslvdo w dsrvlwr q lq wdxp d vlp lædu w ru h{fhghlqj lw kdd|rq gdlv ri vkh *3v dagg *3v1 Klv hp skdvlv rq sdvhwqwf duh dagg dwhnqvlwr q w ghvælo ixvkuhu hqkdqfh vkh surj udp 1

Lq ryhu 93 | hdu/ Ruwkr sdhglf Surj udp &99 kdv hyr qyhg iurp vkh vlp h ri d vlqj dh uhvghq w dw Erwrq Flw dagg rqh ihæz dw Odkh| w lw suhvqhvwæxv1 Z klh vkh lqfhsvr q ri vkh surj udp fdq eh gdvng w 4<83 dagg vkh Odkh| Fdqlf dagg Erwrq Flw Krvslvdo lw prghuq eluk dv d

Xqlyhuwlv surj udp Ruwkr sdhglf Surj udp ujkvixæj wæduw lq &99 kdv hyr qyhg 4<: 3/ z lvk vkh iurp vkh vlp h ri d dvr fldvr q z lvk vlqj dh uhvghq w dw Erwrq Xqlyhuwlv1 Erwrq Flw dagg rqh W lw suhylr xv ihæz dw Odkh| w lw fdq lfd o h{fhghqfh suhvqhvwæxv1 klj kdj kvng e| vkh

Odkh| Fdqlf/ Xqlyhuwlv Krvslvdo dagg vkh Vku lqhuw Krvslvdo vkh qhz Erwrq Xqlyhuwlv Ruwkr sdhglf dhdghwklis wæduwqj lq 4<<: kdv eurxjkw dq rxwædqlqj edvlf vflhqfh uhvdufk surj udp dagg vrxqg dgp lqlwædvlv irxqgdvr q1 Wf vlv lv dgghg vkh wvrqj wdxp d surj udp dwEFK dagg vkh frqvædqvæ xsj udgghg vndfklqj surj udp dagg sdvhwq w edvh dw vkh Odkh| Fdqlf1 Hd f k ri vkhvh slhf hv dndyhv Surj udp &99 z hæ srvlwr qhg iru vkh ixvuh/ dv Lz ulvh vlv klvr uq lq 53351 Vkh ryhu 463 p hp ehw ri vkh Erwrq

Df hvr

Xqlyhuwlv Ruwkr sdhglf Dexp ql Dvr fldvr q dwhvwæw lw sdwklvr uq/ dagg vkh| kdyh surylghg h{fhghq w jxhww dfrvxuhw iru vkh Dexp ql Wndfklqj Gdl/ d wædglvr q hwædvdvkhg e| Gu1 Hlqkr uq lq 4<<: dagg ævhu qdp hg iru Gu1 J 1 Ulfkdu g Sdxo1 Surj udp &99 kdv d vr dg sdw dagg lv z hæ srvlwr qhg e| lw dhdghwklis iru d eulj kwixvuh1

Vkh OdwGhf dgh E| J 1 Ulfkdu g Sdxo

Vkh ævhwghf dgh kdv z lvqhwghg whp hqgr xv jurz vk ri vkh Ghsduw hqw lq ervk vkh yrxp h dagg frpsdh|lv ri vkh vxujfdo surfghxuhv/ vkh wævæxuh ri vkh Ghsduw hqw dv d Ohyho 4 Wdxp d Fhqvnu/ dagg vkh dhdghwklis urd ri vkh dwhnqglqj wlii p hp ehw lq vkhlu uhvshfvlyh vsfhldæv r u j d q l} dvr qv1 Vkh dwhnqglqj wlii/ dæori z krp duh ihæz vklis Oædlqhg/ dagg vkh uhvghq w wlii urxvlqhd p dnh suhvqhvwæv qv dw uhj lraqdo dagg qdvr qdo p hhwqj v1 Vkh dwhnqglqj wlii lqfæghv Wkrp dv Hlqkr uq +vælo mlqw duwkur sævly./ Sdxo Wf uqhwd +ruwkr sdhglf wdxp d

uhfrqvwæfvvr q./ Elæ Fuhhy| +svr uw p hglflqh dagg ruwkr sdhglf wdxp d uhfrqvwæfvvr q./ Euldq Mæyld +vælo mlqw duwkur sævly./ [lqqlqj Q +svr uw p hglflqh./ Wf q| Væqqr xuj +vslq wdxp d dagg uhfrqvwæfvvr q./ Fkdgl Væqqr xuj +vslq wdxp d./ Ure Qlfr dhwd +svr uw p hglflqh./ Dqguhz Vnhlq +kdqg uhfrqvwæfvvr q./ Dqguhz Mlz d +kdqg uhfrqvwæfvvr q./ dagg Ghvr r qg Eurz q +shgl d w lf ruwkr sdhglfv,1

Vkh dwhnqglqj wlii v ri vkh diildævng krvslvdo lq vkh uhvghqf|

surj udp +Odkh| Fdqlf P hglf do Fhqvnu/ Vku lqhuw Krvslvdo iru Fklæghq, dnhz lvh duh dæ ihæz vklis Oædlqhg dagg duh dhdghw lq vkhlu uhvshfvlyh vsfhldæv r u j d q l} dvr qv1

Fxuhq w dagg irup hu dwhnqglqj vxuj hrqv lqfægh= Ur ehw H1 Oædfk +irxqglqj fkd lup dq ri EX Ghsduw hqw ri Ruwkr sdhglf Vxuj hu|/ Hglw u Hp hulvæv ri Vkh Dp hulfdq Mxudori Vsr uw P hglflqh/ Wndvæxuh ri Dp hulfdq Erdug ri Ruwkr sdhglf Vxuj hu|/ Ghsxvly Hglw u ri Fdq lfd o Ruwkr sdhglfv dagg Uhdævng Uhdævfk,/ Gdylg Vhj do +irxqglqj p hp ehw ri Ruwkr sdhglf Wdxp d Dvr fldvr q> Fkd lup dq/ Ghsduw hqwr i Ruwkr sdhglf Vxuj hu| Kdgdwæk P hglf do Fhqvnu/ Mlævædhp / Lvudho/ Wkrp dv Hlqkr uq +Hglw u/ NÆW Uhy lfv > irup hu d Ghsxvly Hglw u ri NÆW,/ Sdxo Wf uqhwd +Suhvghq w Ruwkr sdhglf Wdxp d Dvr fldvr q> hglw u do wlii ri Mxudori Ruwkr sdhglf Wdxp d./ Wp lrvnu +Dvr fldv h Hglw u/ Dp hulfdq Mxudori Vsr uw P hglflqh/ Z lædp Fuhhy| +YS/ Erwrq P hglf do Fhqvnu 2 FHR EX VP ldfxæv Sufvlf h lrvægdvr q./ dagg Z lædp Khd d +Fkd lup dq Hp hulvæv/ Ghsduw hqwr i Ruwkr sdhglf Vxuj hu| Odkh| Fdqlf lrvægdvr q,1

lurp d surj udp vkw dffhsvng rqh uhvghqwiru rqh | hdu ri wædlqj lq 4<83 w dsurj udp vkw dffhs wilyh uhvghq w iruilyh | hdu ri wædlqj lq 5346/ Erwrq Xqlyhuwlv Ghsduw hqw ri Ruwkr sdhglf Vxuj hu| 2 Ruwkr sdhglf Uhdvghqf| Surj udp &99 kdv hyr qyhg lq w d qdvr qdæ surp lqhw surj udp z klfk lv wædlqj vkh ixvuh jhqhudvr q ri dhdghw lq ruwkr sdhglf vxuj hu| 1



Skr w j u d s k l f H v d |

E h d x w i x o E F K =

D Skr w H v d | r i 4 < v k F h q w u j Y l h z v r i v k h E r v w q F l v j K r v s l v d o

M d p h v V 1 E u x v w P G
E r v w q X q l y h u l v j V f k r r o r i P h g l f l q h
F a d v v r i 4 < 9 ;

S h v h u v R v a d q v
E r v w q X q l y h u l v j V f k r r o r i P h g l f l q h
P G F d q g l g d v h / F a d v v r i 5 3 4 7

G u l M d p h v V 1 E u x v w l v d s v j f k l d v l w l q s u l y d v h s u d f v f h l q V a q S h g u r / F a d i r u q l d d a g v h y h v d v F k d l u p d a q r i v k h
G h s d u p h q w r i S v j f k l d v l d a g P h g l f d o G l u h f w u r i v k h S v j f k l d v l f X q l v d w S u r y l g h q f h Q w a h F r p s d a j r i P d j
P h g l f d o F h q v h u l q V a q S h g u r 1 K h l v d a r D w l w a q w F d a l f d o S u r i h w r u r i S v j f k l d v l d w k h G d y l g J h i h q V f k r r o r i
P h g l f l q h d w X F O D / d a g v a d f k h v s v j f k l d v l f u h l g h q w d w k h K d u e r u X F O D P h g l f d o F h q v h u l

L a d g g l v r q w i x a v l p h s u d f v f h / G u l E u x v w l v d a q l a g h s h a g h q w k l w r u d a q / v s h f l d o j l a j l a 4 < v k f h q w u j s r s x a d u s u l q w
d a g s k r w j u d s k v r f f d m r q d a j f u r w l a j r y h u l q w p h g l f d o v s l f v l a f a g l a j P d j Q a f r a e 1 K h k d v z u w h r q r y h u
i r u l y m x u d o d u l f d v / v h y h u b e r r n f k d s v h u / d a g l v d f r a d v k r u r i v k h e r r n Z k h u F x w h u l h a e S k r w j u d s k v r i
v k h Q w a h E l j k r u q E d w a h i l h a g V k h q d a g Q r z - X q l y h u l v j r i R n a k r p d S u h w / 5 3 3 8 , 1 M a f h 4 < < 8 / G u l E u x v w
k a d e h q d f t x l u a j d a g g r a d m a j k l w r u f d o d u l f d v u h a e m a j w E X V P d a g v k h E r v w q F l v j K r v s l v d o



q h l a g h j r i v k h
l a q w a j h a f h d a g
s x e d f v s l u w r i d
f r p p x q l v j l v v k h
z d j l a z k l f k l w s u r y l g h v i r u v k h q h g v
r i v k h v l f n d a g s r r u l E r v w q / l a
h w a d e v k l a j d a g p d l q v a l q l a j d
P x q l f l s d o K r v s l v d o ' E ` k a d j l y h q
s u r r i r i d k x p d a l v a l d a q v s l u w d a g d
f l y l f l a q w a j h a f h v h f r a g w q r f l v j l a
v k h X q l v a g V a d v h / O v a l g h d u j E F K
v x s h u l q v h g h q w h r u j h U r z h / P G 1 l a
d g g l v r q w l w v j p e r e d f y d o x w v k h
f r p p x q l v j / d a g v k h j r r g p h g l f d o
f d u h s u r y l g h g v k h u / v k h r u l j l a d o
E r v w q F l v j K r v s l v d o z d v d e h d x v i x o

f r p s d a j 1 H u h f v a g l a 4 ; 9 7 / m a w d v
s r s x a d u j s u l f h g s k r w j u d s k v z h u h
e h f r p l a j z l g h d d y d l a e d v /
s k r w j u d s k h v p d g h d a g v r a e p d a j
l p d j h v r i E F K l a l w h d u j | h d u /
z k l f k z d v d p d u n r i f l y l f s u g h r q v k h
s d u r i v k r v h z k r s x u f k a d v h g v k h v h
s l f w a h v 1
V k l v d u l f d h s u h v h q w d j u r x s r i 4 < v k
f h q w u j s k r w j u d s k v r i v k h E r v w q
F l v j K r v s l v d o P r w w d u h v h u h r j u d s k v
- d a r n a r z q d v v h u h r y l h z v ; > g r x e d h
l p d j h v p r x q v a g r a d f d u g / p d g h e l d
f d p h u d z l v k v z r d h q v h v v s d f h g v k h
v a p h g l w a l f a f h d s d u w d v k x p d a h j h v 1
Z k h q v h q v k u r x j k d v s h f l d o y l h z h /

v k h j d y h d v k u h g l p h q v r q d o h i i h f w
y h j z h a v x l v a g i r u v f h a l f / a d a g v f d s h /
d a g d u f k l v a f v x u d o s k r w j u d s k v 1
V k r x j k v r p h k l w r u l f d o l q i r u p d v r q
l v l a f a g h g l a v k h f d s v r q v / v k l v d u l f d h
l v l a q r z d j p h d a w w e h d
f r p s u h k h a v l y h d f f r x q w r i v k h
k r v s l v d o v h d u j | h d u / e x w u d v k h u d a q
d h v k h v l f a r n e d f n d v d s x e d f e x l a g l a j
f r p s d a j v k d v z d v d e h d x v i x o d v l v z d v
k h a s i x o d a g l p s r u a d a v t
D a e l a x v a d v r q v l a v k l v d u l f d h d u h
i u r p v k h f r a e f v r q r i v k h E r v w q
X q l y h u l v j P h g l f d o F h q v h u D o x p q l
P h g l f d o Q e u d j / g r a d v a g e l d x v k r u
M d p h v E u x w l

I lj xuh 4=Dqr q| p rxv #h1qr skr wj udkhu lghqwilhg, wnhur j udk/ vz r dæxp hq vlo/hu sulqw/ hdk 6 { 6 lqfkhv/ p rxqvhg r q d 6 62; { : lqf k fdug +df vx do vl}h vkr z q,1Wklv lv vkh vj slf do ds shduqf h ri d 4<vk fhqvu| wnhur ylh z 1Lq vxeht xhqwæxwudvr qv z h kdyh vkr z q r qd r qh vlgh ri vkh wnhur j udk/ r i vnhqvp hv hqædj hg w p dnh vkh lp dj h ghvælo p r uh fædu +vhh I lj xuh 5 ir udq hqædj hp hqwr i vklv ylh z ,1

I lj xuh 5=Hqædj hg ghvælo ri I lj xuh 41Wklv lv dq hduq ylh z / dnhq vænhq lq vkh 4; 93v1Lwvkr z v vkh vkuh p r wv sur p lqhqr i vkh r uj lqdoexlæglqj v1Lq vkh fhqvhu lv vkh p dj qlilfhqwDgp lqlwudvr q Exlæglqj z lvk væof r æp qv dqg wævhq grp h/lw dsh{ ulvqj w dkhj kwri 47; ihhv1'5` Rq vkh dhiwlv Sdyldr q L/ vkh vxuj lf dosdyldr q z lvk z dugv D/ E/ F/ dqg G1Rq vkh uj kwSdyldr q LLkr xvhg p hglf doz dugv H/ I / J / dqg K1Er vkh z huh fr qqhf vng w vkh Dgp lqlwudvr q Exlæglqj el d fxuyhg/ fryhuhg fr æqqdgh1Wkr xj k qr wfxuuhqvæ p dunhg z lvk lqvhusuhvlyh vij qdj h der xwvkhlu r uj lq/ vkh vz r Sdyldr qv wæwædq wgd| / qr z qdp hg EFG æhiw dqg I J K ælj kw divnu vkh z dugv vkh| r qfh fr qvælhqg +vhh I lj xuh 47,1Wkh r vkh r uj lqdo exlæglqj z dv d er ldu kr xv h gluhf væ ehklqg vkh Dgp lqlwudvr q Exlæglqj / khqfh qr wylvæd lq vklv skr wj udk1Wkh exlæglqj vnhq lq vkh glwæqfh ehklqg vkh uj kwfr æqqdgh lv sur edeq Sdyldr q LLL/ exlowvz r | hdv ævhu æder xw4; 99, w kr xv h vhs w f f dvhv uht xlulqj lvr ævtr q1Lq vkh ir uhj ur xqg lv Kduvtr q Dyhqxh/ dwkh vlp h d gluwwvnhv1Wkh ehdxv r i vkh duf klvæf vxuh dqg æd| r xwr i vkhvh exlæglqj v lv hylghqvæ

I lj xuh 6=VKlv p ds ri EFK dgg vkh dgrdf hqwdud e| J P 1K r snlqv) Fr 1j lyhv d ehvnu ylhz ri vkh uhvdyh af dvr qv ri vkh exlq lqj vkrz q lq l lj xuh 4) 5/z klfk ir up d Ô Övkds hg fr qilj xudvr q lq vkh duhd p dunhg Ô Flv Kr vs lvd Ô Vkh sur qj v ri vkh Ô Öduh Sdyldr qv L+lj kw dgg LL+chi w udf klqj xs w z dug K duvr q Dyhqxh/ z klfk daj dhv df ur w vkh w s ri vkh p ds 1Vkh sz hu vhf vr qv ri vkh sur qj v duh vkh fxuyhg/ fr yuhg fr sz qdghv/ z klfk vkh q fr qdghv w vkh dgp lqlwudvr q exlq lqj lq vkh fhqvnu/ lw grp h uhsuhvq vng e| d fluf dh 1Vkh sz hu vhf vr q ri vkh Ô Öj r hv wudlj kw grz q w vkh erldu kr xv vkw d iur qw r q Dædq| Vuhhv Sdyldr q LLlv vkh riivkr r wexlq lqj w vkh chiwri vkh edv ri vkh Ô ÖVkr xj k s xedvkhg lq 4; : 7/ vklv p ds p xwkd y ehq p dgh d | hdu r up r uh hdu hu/ dv lwwvævkr z v vkh Qhz Hqj æqg l hp dh P hglf do Fr æhj h w vkh l j kw ri vkh Flv Kr vs lvd oj ur xqgv/ hyhq vkr xj k lwkdg ehf r p h vkh Er w r q Xqlyhu w Vkr r ori P hglf lqh vkh | hdu ehir uh 1Exwklv z dv ehir uh vkh p dmuf kdaj hv w EFK r xwæqhg lq l lj xuh; 043 ehaz 1

I lj xuh 7=VKlv hdyd vng fævh xs ri vkh grp hg Dgp lqlwudvr q Exlq lqj / sur edeq vnhq iur p Sdyldr q Lj lyhv d ehvnu ylhz ri lw duf klvrf vudo ghvælv 1 Vkh erldu kr xv z lvk lw vp rnhwæfn/ gluhfvæ ehklqg vkh grp hg wæxfvæuh/ lv ylvæd iur p vklv daj dh1

I lj xuh 8=D j ur xqg dnyhofσvhs ri vkh grp hg Dgp lqlwudvr q Exlqglqj dgg vkh fxuyhg sdvk dhdglqj w lvd Xqdnh p r wdufklvxfwudoylh v ri vkdwhud/ vklv r qh fr qvdlqv shrsdh1Rq vkh uj kwd z r p dq lq d σqj guhv ri vkdwhulrg dssurdfkhv dσqj vkh sdvk/ z klh lq vkh edfnj ur xqg d p dq vlv r q vkh exwvhw r q vkh dhiwvlgh ri vkh z lgh wvqh wdluz dl 1Vkh| j lyh vfdh w vkh lp dj h/ exw dvr uhp lqg xv vkdwvklv kr vslvbz dv d salfh vkdw fdhg ir ush r sdh1

I lj xuh 9=Dqr vkh uhdvwhq hduq ylh / vklv r qh vlnhq r q dq daj dh vkdwkrz v p r wri Sdyldr q Lexw r qd vkh iurqw fr uqhu ri Sdyldr q LL1 lq vkh ir uhj ur xqg/ freedwvqh v kdyh uhsalfhg vkh salfg gluwvhq dσqj Kduulv r q Dyhqxh lq I lj xuh 4 dqg 51

I lj xuh :=Dq xqvxdo ylh vlnhq iurp ehklqg vkh Dgp lqlwudvr q Exlqglqj/ σ rnlqj wz dug Kduulv r q Dyhqxh1Vkh fxuyhg fr σ qdghv dhdg w vkh edfnv ri Sdyldr qv Ldqg LL1Rq vkh idu dhiw vkh iurqw fr uqhu ri vkh vndp kr xv h lv nwweduhq vhhq1Dqg vkr xj k l wgr hvq vkrz z hdlq vklv vfdq/ z kdwdsshduw w eh d yhj hvledh j dughq ilaw vkh vsdfh w vkh uj kwri vkh grp hg exlqglqj 1Dw vkh idu uj kw vkh Fkxufk ri vkh lp p dfxavh Fr qfhs vlr q/ z klfk vkw wdlqgv/ lv vhhq1Lw fr uqhu wvqh z dv d lq 4; 8</ vkvxvshgdvqj EFK 1

I lj xuh ; =Vklv lv dq lp sr uwlqwwdqvlvr qdo
ylhz 1Rq vkh uj kw vkh fryhuhg fr σ qdqgh
qrz uxqv rqq d vkruw glwldqfh ehiruh
p hhwldqj d qhz exlglqj / lw fr qwwxfvr q
vf diir ogv vwlolq saf h1Vkh vdp h vf diir glqj
lv dvr vhhq r q vkh dhw vkr xj k vkh df vdo
qhz exlglqj r q vkwvlgh lv rxwlg h vkh
ilhq ri ylhz ri vklvskr wj udk1

Ryhu vkh kr vsldov iluwghf dgh/ vkh sr sxdlvr q ri vkh flv j uhz / dqg vkh ghp dqg ir u ehgv lqf undvhg1Lq 4; : 7/ vkh
vwxvnhv dqg p hglf do wdii fr qylqfhg vkh Flv Frxqflow dssur suldv ixqgv w hqdlj h vkh p hglf do dqg vxuj lf do
z dugv1Vklv z dv dfr p sdvkhg e| fr qwwxfvqj vz r qhz exlglqj v ehvz hhq vkh h{lvldqj Sdyldr qv Ldqg LLdqg vkh
Dgp lqlwddvr q Exlglqj r q hlvkhu vlgh1Vkh fryhuhg fr σ qdqghv z huh vkr xv vkr uwhqhg r q er vk vlghv dv vkhvh qhz
exlglqj vilahg p r wri vkh vsdf h vkh| kdgr ffxslhg1

I lj xuh <=Vklv p ds sxedvkhg e| J Z 1 Eur p dh|) Fr 1lq 4; ;6 vkrz v vkh unadlyh sr vlvr qlqj ri vkh vz r qhz
exlglqj v ehvz hhq vkh r uj lqdosdyldr qv dqg vkh Dgp lqlwddvr q Exlglqj 1Dv lq I lj xuh 6/ Kduulvr q Dyhqxh dqj dhv
dfur w vkh ws ri vkh p ds 1Vkh z rugv ÔFlv Kr vsldvãduh sulqvhg uj kwvkr xj k vkh vz r qhz exlglqj v dqg vkh
grp hg Dgp lqlwddvr q Exlglqj 1

I lj xuh 43=Vklv lv shukdsv vkh ehww4<vk fhqvxuj ylhz ri vkh Erwrq Flw Krsvlvald sduw ehfdxvh vkh rujlqdolvd
aduj huirup dw/vlqj dh 7 { 9 lqfk skr wj udsk z klfk j lyhv j uhdvnu ghvalovkdq d 6 { 6 vnuhr kdó1Vkh vz r qhz exlqqlqj v
kdyh ehq fr p schvng 1Luz dv vdlg Ôkhl kdg vkh vdp hj hqhudowj dh dv vkh vz r r og husdyl dr qv/Æ `dqg fduh z dv vdhq
w sãfh vkhp dj uhdedq lq uadvr q w vkh Dgp lqlwudvr q Exlqqlqj 10'6' Vkh uhvawz dv d fdufxwdhvkhwf vxfhw1
Vklv iurqw id•dgh ylhz ri vkh Erwrq Flw Krsvlvald vdhq dfur w Kduulvr q Dyhqxh iurp vkh hqwdqfh w Z r uf hvhu
Vt xduh Æhh vkh fr uqhu vnfvr qv ri sdyhp hqwlq vkh iruhj urxqg r q hlvkhu vlg, lqvsuhg qxp hur xv haj udylqj v vkdw
ds shduhg lq er r nv dqg shulr glf dæ/ glw hp lqdWqj vklv lp dj h w dp xfk z lghudxglhqf h Æhh I lj xuhv 44 dqg 45,1

I lj xuhv 44) 45= Væ r haj udylqj v ri vkh
iurqw id•dgh ylhz ri vkh Erwrq Flw
Krvslvald vkh w s r qh iurp Nlqj w Kdqgerrn
ri Erwrq/ ^7' vkh r vkh iurp D Klwruj ri vkh
Erwrq Flw Krsvlvald ^8' Edvhg r q
skr wj udskv dnh vkh r qh lq I lj xuh 43/ vklv
ehfdp h vkh vj qdvuh ylhz ri EFK1Lq vkh
hud ehir uh derxw4; <3/ z khq skr wj udskv
frxqg qrweh gluhfvð uhsurgxfhg r q vkh
sulqvhg sdj h/ haj udylqj v vxfk dv vkhv h lq
er r nv dqg shulr glf dæ eurxj kwvklv lp dj h
w dz lghudxglhqf h1

I lj xuh 46= Vkh Erwrq Flv/ Krsvlvdlo ehfdp h dq
dufklvfvxudo adqgp dun iru vkh hqvuh Vr xvk Hqg1
Vkh vxerhf w ri vklv skrwrj udsK lv Z ruf hvhu
Vt xduh/ vlnhq iurp vkh Z dvklqj wq Vvnhwvlgh1Exw
vkh p rwwqr vlf hdedh wuxfvxuh lv vkh grp hg EFK
Dgp lqlwudvlyh Exlqglqj dfur w Kduulvr q Dyhqxh
lq vkh edf nj ur xqg1

I lj xuh 47=P rghuq fr p sduvr q skr w r q
vkh er wr p / vlnhq el dxvkr u Mlp hv Euxww
lq 53461 Vkh ylhZ lv dfur w Kduulvr q
Dyhxh iurp vkh hqvudqfh w Z ruf hvhu
Vt xduh1 Vkh grp hg Dgp lqlwudvlyh q
Exlqglqj z dv uhp ryhg lq vkh 4<63v/ vkh
dgglvwr qdo p hglfdo dqg vxuj l f do
exlqglqj v dgghg lq vkh 4; :3v duh qr
σ qj hu suvhqv/ dqg qr wdfh uhp dlqv ri
vkh fryhuhg fr σ qdghv1Exwvkh r uj lqdo
Sdyldr qv Ldqg LL wlvwvldqg/ qr z qdp hg
EFG +chi w dqg I J K +uj kw1Vkr vh dhwvhu
z huh vkh qdp hv ri z dugv lq vkr vh
exlqglqj v1 Vkhvh z huh vkh iluwv vz r
Erwrq Flv/ Krsvlvdlo wuxfvxuhv xvhg iru
sdvnhqwf duh z khq EFK rshqhg lq 4; 971
Vkdqnxad vkh| wlvwvldqg 000vkh| rxj kw
w eh suvhuyhg/ p dunhg/ dqg
uhp hp ehuhg1



Qr vlv=
^4` FkhhyhuGZ / J d| J Z / P dvr q DO/
Eadh NE/ hg v1D Klwruj ri vkh Erwrq Flv/
Krvslvdlo l urp Lw l rxqgdvwr q Xqvlw4<371
Er wr q=P xqf l s do Suqlvqj Riilfh>4<391
Scj h 41
Df hvr

^5` Lelg/ ; 1
^6` Lelg1 440451
^7` Nlqj P 1Nlqj w Kdqgerrnri Erwrq/
Surixvhd Laxwudvlyh1Er wr q=P r vlv Nlqj
Sxedvkhv>4; ; 1Sdj h r ss 153; 1

Vklv errn z dvhqrup rxvdj srsxadu/ dqg
uhlvxhg r q d| hduq edlvir uryhud
ghf dgh/ z lvk vklv ylhZ ri vkh Erwrq
Flv/ Krsvlvdlo q hdk suqlvqj 1
^8` Fkhhyhu/ iur qvlwslhf h1

Slf vx uhv ri Edelhv=

P dvvdf kx vhw P hp r uldo Kr vs lvdor* Rx wuhdf k w
Vhuylf hp hq lq Z Z LL

D*Qd q HwWhq/ P QLV
Khdg ri Whf kqlf do Vhuylf hv
Er vw q Xqlyhuwlv Dax p ql P hglf do Qeudul



qlp suhwlyh dw iluw
σrn/ r qh sād q
p dqlad ir aghu lq vkh
P hglf do Qeudul
Dufklyhv fr qvdlq
z kdwp xweh dp r qj

vkh p r w lqvuhwlvqj klwufdo
fr adhv r qv r q vkh Er w r q Xqlyhuwlv
P hglf do Fdp sxv1 Odehdg
Ôhuylf hp hqv x uhsdhv
df nqr z dhg lqj slf vx uhv ri edelhv
4<76078Ô vkh ir aghu fr qvdlq 496
dhwlv/ vshg ru kdqgz ulwng/ r q
| hœ z lqj sdshu udaj lqj iur p
luhj xadud vkdshg vkhhw w
wvdlv qdud z lvk vkh lp sulqw ri
r uj dql} dvr qv dnh vkh Xqlvng Vwlvhv
Qdy| / vkh Dp hufdq Uhg Fur w/ d qg
p dql r vkhu1 Dv vkh adeho wvdlv/
vkhvh dhwlv h{ suhv vkh
dssuhfldvr q ri vhuylf hp hq lq vkh
X1M1 plvdud z kr uhfhlyhg
skr wj udkv ri vkhu qhz er uq
edelhv/ d qg vkh| fr p h iur p dv qhdu
dv Grufkhvhu/ ru dv idu dz dl dv
Lqgld/ Fklqd/ Hqj adqg/ vkh
Skldsslqhv/ d qg Ôrp hz khuh dw
vhdÔ

Vkh dhwlv duh khag lq vkh
dufklyhg uhfrugv ri vkh
P dvvdf kx vhw P hp r uldo Kr vs lvdor
Df hvr

+P P K,/ EXVP x diildvng kr vs lvdor
gxulqj vkh z du | hdu1 Vkdw
uhadvr qvkl s kd fr qvaxhg vkur xj k
vhyhudoqdp h fkdqj hv w Xqlyhuwlv
Kr vs lvdor EX P hglf do Fhqvhu
Kr vs lvdor d qg ilqdad/ divnu vkh
p huj hu z lvk Er w r q Flv Kr vs lvdor
w Er w r q P hglf do Fhqvhu/ wgdj /
p dnlqj vkh fr adhv r q sduwri nww
r qh fkdsvnu lq vkh fr p sdh{ klwud
ri vkh EX P hglf do Fdp sxv1

Vshlilf fr qvhw lv
xqir uxqdvng vfdqv/ z lvk qr vklqj
lq vkh Dufklyhv h{ fhs wvkh adehdg
ir aghu d qg vkh dhwlv vkhp vhg hv1
Z hfdq vnh vkdwkh P P K Kr vs lvdor
Dlg Dwr fldvr q duudaj hg w vhaq d
skr wj udk ri d p r vkhu d qg khu
qhz er uq w vkh ghsa| hg idvku
z khqhyhu d vhuylf hp dqx z lih
ghdyhng d edel dwkh kr vs lvdor exw
krz p dql vxfk edelhv z huh er uq/
vkh rshudvr qdo gdhv/ fr w d qg
r uj dql} dvr q ri vkh sur j udp / d qg
r vkhu lqir up dvr q lv xqf dhu1 Vwlv
lvw sr vtedh w jdvku sdqv ri
idv lqdv lqj ghvdlor1

Rqh lp dj lqhv lwp xwkd yh
ehq d vdlw| lqj vlvn ir u vkh shvr q
uhsv r qvtedh ir u vslaj d dhwlv d qg
vhaqlaj vkh skr wj udk r q lv

mxuqh| = d q r s s r uxqlv w jlyh
j r r g qhz v d qg m| w v r p h r qh z kr
p l j kweh dvxp hg w kdyh vshfldo
qhg ri lvd Mgjlqj iur p vkh
uhsv r qvhu/ vkh vhuylf h z dv rivng
xqh{shfvng1 Vkh skr wv z huh
uhfhlyhg/ lq vkh z rugv ri v r
z ulvnu/ dv d Ôp r w z h r p hg
vxuslvh/Ô d qg d q lghd Ôp r w q r yho
d qg klj kd dssuhfldvng Ô

Lq uhv vshfwd skr w ri klv
qhz edel p dl vhp d q reylrxv
z dl w eulj kvng d vhuylf hp dqx gdl 1
hw vkh deryh fr p h qw/ d r qj
z lvk dqr vkhu vr aglv w vdlv h qw
vkdw Ôlv r qh ri vkh ehv wklqj v Lyh
khdug ri vqf h Lyh ehq lq vkh
vhuylf h/Ô vxj j h w vkdw q r w hyul
kr vs lvdor kdq d q Dlg Dwr fldvr q
dedh w sur ylg h vkh hqfr xudj hp hqv
Lq idf w vkh lv p dl kdyh ehq d vshfldo
ehqhilw w ghdyhulqj dw P P K 1 Vkh
sur j udp / r qh p d q z ulvnu/ Ô v d y h u l
vkr xj kvxodqg vs dhqglg lghd/ d qg li
r vkhu kr vs lvdor Æ` r qd nqhz ri
vkh m| d qg kdsslqhv uhfhlyhg Æ`
Lp vxuh vkh| z r xag dar dgr sw
vxfk dyhul ilqhs r d f j Ô

Xqir uxqdvng / q r qh ri vkh
skr wj udkv duh dufklyhg/ exwz h
gr kdyh d q h{ dp sdh ri vkh q r v h vkdw

df fr p sdq lhg vkhp 1D eulhi/ p dwnu0
ri0df w wvlnp hq w lwj lyhv vkh gdvh
daq vlp h ri eluw/ vkh fklag w vh{
daq z hlj kw/ daq vd| v/ vlp sd/
ÔNklqlaj lw z rxag dgg w |rxu
kdsslqhw w kdyh d slf vxuh ri |rxu
qhz vrq ^ru gdxj kvnu/ d
skrwj udsklv hqf a vhg Ô

Vkh slf vxuh z huh qr w
daz dl v xqh{shf vng=z rp hq/ dz duh
ri vkh skrwj udsk daq lw sxusrvh/
p dl kdyh p hqvr qhg lw w vkhlu
kxvedagv lq vkh lurz q dwnu/ daq lw
p xwvr p hvp hv kdyh ehq d p dwnu
ri z klfk hqyh sh duylhg iluw Rqh
vr q lhu vd| v/ Ô z dv w ag vkdw |rx
z huh vhg lqj p h d slf vxuh ri p |
z lih daq edel daq Lxh ehq
z dlwaj sdvhqvd hyhu vlqfh Ô K h
j rhv r q w vd| / Ô Exwp dl L dgg lw
z dvf huw lq d z ruvk z dlwaj ir u Ô

Rqh dwnu revhuyhv vkdwvkh
skrw z dv vlnh q el Ere Nhadu/
z krp vkh z ulvnu nqhz dv vrp hrqh
Ôdfvlyh z lvk vkh Xqlvng Z du l xqg
ir u p d q | hdu Ô Qr lqir up dvr q
derxw P ut Nhadu lv duf klyhg/ exw
vklv vxj j hww kh z dv vkh
skrwj udskhu ru r qh ri p xalsh
skrwj udskhu, / uhv lqhg el vkh Dlq
Dwr fldvr q w ylvwvkh kr vslv odag
vlnh vkh slf vxuhv1 Vklv p xwkdyh
ehq vd| v | lqj z run/ nqrz lqj vkdw
vkh skrw z rxag eh z hfr p hg el
idu0 ii idvkh/ khslaj w dvxuh
vkh ri vkh vxew lqfh daq uhdv/ ri
d fklag vkh| p lj kw qr w vhh iru
p r qvkv1 Dv r qh p d q z ur vln/ Ô w z dv
gr xed uhdvxulaj w p h divnu p |
a qj z dlwv vhh vkdwkh z dv z haelq
dgg lvr q w khdu lqj lv Ô

Rvkhw ghvfuleh vkh slf vxuh
dv Ôkh p r wvkr xj kvxw ^mf` j liw
vkdw L kdyh uhf hlyhg iur p d q |
vrf lhw ^E` gxulaj p | dup |
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hyhu j r w h q Ô P d q | z ulvnu dor
p hqvr q vkdwvkh| z lœ fkhulv vkh
slf vxuh daq fduj lwz lvk vkhp 1Vklv
p xw kdyh ehq z r qghu x o
Df hvr

hqfr xudj hp hqwiru Dlq Dwr fldvr q
p hp ehw/ sur ylg lqj f dnu
fr qilup dvr q vkdw vkhlu z r un z dv
dssuhfldvng1

Dwydu lqj daj vkv daq lq
vkh gliihuhqzw rugv fkr vha el hdfk
z ulvnu/ vkh dwnu h{sa lq krz
p xfk lwp hdqww p hq w dvr qhg lq
ir uhj q adqgv ru dwdv w uhf hlyh d
slf vxuh ri d fklag vkh| kdq | hww vhh
lq shur q adag shukdsv/ lq vrp h
fdvhu/ z rxag qr w dyh w vhh, 1Vrp h/
z ulvnu divnu d uhv uq krp h/ vxj j hww
vkh wuhaj vk ri vkr vhh ihdaj v=hyh
divnu uhv uq lqj w Eur rndq h/
P haur v h/ Z dnhilag daq r vku a f do
w z qv/ z lvk vkh dgr w p hq w ri uh0
hqvd w flyldd q di h/ vkh| ihav lw
lp sr uvdq w z ulvnu d qr v h w vkh
kr vslv od vxshu lqvng q h w vk d q n l q j
klp daq vkh Dlq Dwr fldvr q ir u vkh
fkdqfh w vhh vkhlu qhz edel dv
vr r q dvr sr vled h1

Wfgd| / z khq qhdud hyhu
qhz p r vku ghdyhulaj dw EP F
p xwvr z q d fdp hud daq 2r u d skrqh
f d s d e d h ri vlnlaj daq vhg lqj
slf vxuh/ l w x q d n h d q | r q h z r x a g
p x f k d s s u h f l d v n v k h k r v s l v o
v h g l q j d s k r w j u d s k h u w v a d s d
slf vxuh ir u d p l d v u l s d u h q v l q v k h
p l g 0 4 < 7 3 v / k r z h y h u / z k h q d p x f k
d w f d v x d o u h a d v r q v k l s w
skrwj udsk| suhydng/ lw p xw
kdyh ehq d uhp dunded daq
suhflrxv vklaj w uhf hlyh vkdwiluw
lp dj hri d qhz er uq fklag1

Vkh p dldaj z dv qr w
hqvuhd v h o d h v = v k h D l q D w r f l d v r q
glg q r w p l w v k h r s s r u x q l v i r u
sur p r v r q 1 V k h d w n u z l v k v k h
edel w eluk lqir up dvr q lqfoxhg d
sdudj udsk h{sa lq lqj vkdw vkh
slf vxuh z dv sur ylg hg Ôgxh w vkh
vkr xj kvxw h w ri vkh p hp ehw ri
vkh Dlq Dwr fldvr q ^E` p dgh
sr vled h el xv h ri vkh p r q h | v k h
D w r f l d v r q k d v s u r y l g h g Ô D s u h 0
d g g u h w h g h q y h a s h z d v d a r
l q f o x g h g / l q w a v n g d q v f l s d v r q v k d w

idvkhuz z rxag dnh w Ôdf nqrz dngj h
uhf hls w Ô ri vkh slf vxuhv1 +Vklv
hqyh sh uhp dlqv d w e l f k h g w p d q |
d w n u / g h p r q w u d v l q j v k h v l a d u x h
i d f w v k d w l w w d a z d l v j r r g i r u v k h
uhv sr q v h u d v n w p d n h u h s d l q j d v
hdv | d v s r v l e d h 1

Vkhv dwnu vkvx uhvuhq w
d sdud sur p svng uhv sr qvh/
shukdsv dv p xfk dv d vsr qvdqhr xv
rxv sr xulaj ri j u d v w x g h 1 l q g h h g / d v
d h d w r q h v r a g l h u g h f d q h g w v h a g d
j u d v n i x o q r v n / z k l f k z r u n v w r x u
d g y d q v a j h w g d | = r x u h { d p s d h r i
v k h v n { w v k d w d f f r p s d q l h g v k h
s k r w v l v r q h r i v k h v h D l q
D w r f l d v r q d w n u / u h v u q h g z l v k d
f u l v s Ô u h f h l s w d f n q r z d n g j h g Ô
v f u d z d g d w v k h e r w p d e r y h v k h
v l j q d v x u h r i v k h i d v k h u l z k h v k h u v k l v
p d q z d v e x v l h u v k d q r v k h u / d w v
l p s u h v h g z l v k v k h d u w r i
s k r w j u d s k | / r u v l p s d q r w j l y h q w
z r u g | g h f a d u d v r q v / l v l p s r v l e d h w
v d | 1 U h j d u g d w / k l v a f r q l f u h s d l v
d s s u h f l d v n g q r z / v l q f h l w j l y h v x v
v k h f r q v h q w r i v k h d w n u v h q w d a q j
z l v k v k h s l f v x u h v > v r p h v k l q j z h
f r x a g r v k h u z l v h r q d j x h w d v l

P d q | d w n u d u h s h u i f w
h { d p s d h r i v k h f a d w l f v k d q n d r x
s u h f u l e h g e l h v t x h w n d g y l v r u /
z l v k v s h f i l f / s r v l w y h p h q v r q r i
v k h l v n p u h f h l y h g + Ô v k h s l f v x u h
f d p h r x w v z h a d d a q k r z s d h d v h g
v k h u h f l s l h q w l v + Ô u h d a d l v d j u h d v
v k l q j w k d y h d s l f v x u h r i v k h e d e l
d w x f k d | r x a j d j h Ô 1 l i q h f h w d u l /
d q d s r a j | l v r i i h u n g i r u v k h
a d v n q h w r i d u h s d / x v x d a d
g h v f u l e h g d v g x h w d g h a d l q
u h f h l s w r i v k h s l f v x u h / r u g l i i l f x a l y
z u l v a j + Ô y h n a w w u h v x u q h g i u r p d
i x u a x j k / d a q l w w e h q z d l w a j k h u h
i r u p h d a v k d w l p h Ô r u Ô x p d y l a j
x a g h u f r p e d w f r a g l v r q v / d a g h y h q
j h w l a j v k h s d s h u d a g h q y h a s h w
z u l v n z d v d a f n | w r n h Ô 1 D q r v k h u
v r a g l h u / d v a q j d v k h z d v z u l v a j /
w r n v k h r s s r u x q l v w u h t x h w

dwlwdaqf/ flwqj Flufxadu Qr1 4:
daq dvnqaj vkh Dlg Dwrflidvraq w
dhwklv z lih nqrz vkh vkrxagqawsd
irup hglf do vhuylf hv fryhuhg el vkh
Z du Ghsduwp hqv

Hyhq li surpsvng el vkh
z ulvnhq h{shf vdvraq vkwvkh} z rxag
vhqg d vkdqnd r x qrv/ vkh shur qdo
skudmaj d qg vlfqhuh sdxvuh
h{suwhvg lq p daj ri vkhv dwhuv lv
fchdu hylghqf h vkwvkh vhuylf hp hq
vlfqhuhd ydoxhg vkh surjudp 1
Z klh vkhuv lv reylrxvd d wurqj
frpprq vkhp h w vkh dwhuv/ lww
idvflqdvaj w vkh vkh ydvdvraq lq
vkh z daj vkhv p hq dssurdfkhg vkh
vavn1 Vrp h duh udvkuh lqirup d
vljqlaj rii z lvk diluwqdp h/ z klh
rvkhuv vsho rxwvkhlu ixo pldvaj
vwh1 Vrp h kdyh vjshg vkhlu dwhuv/
z klfk lv rivnhq pruh djledh exw
z klfk dar frqfhdv vkh vqhvi ri
shur qdov vkwdfdq vkrz vkrxjk
lq vkh kdqgz ulvnhq qrvh1

Vkhv advnu slhf hv duh
qhadv sulqng lq eafn dwhuv/ ru
z ulvnhq rxw lq hdj dqw vfulsw ru
txlfnd vudz dng/ dv li vkh z ulvnu
vlp sd z dqvng w glvkdj h d gxv
daq p ryh r q1 Vrp h vxj h w h d v
daq ioxhfj z lvk vkh z ulvnhq z rug/
z klh rvkhuv duh vrp h z kdwf xp vj/
dnhd glvsad lqj ydvlaj d yho ri
hgxfdvraq d qg idp lddv v z lvk vkh
irup v ri vkh gdj +Q uhp dlq/ yhu
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z daj lq z klfk z dulp h/ dnh vkh
h{shulghqf h ri vkh idudz daj eluk ri d
fklag/ fdq eoxv r flr h r q r p lf d q h v
uhj dugdhw ri vkhlu krp h v z q/
flyldd surihvraq ru d yho ri
hgxfdvraq/ d vkhv p hq z ulvnu dv
p hp ehv ri vkh Xqlvng Vdvuv
pldvaj d qg dv idvkuh ri qh z er uq
fklaguhq/ d v k d y l a j e h q h i l v n g i u r p
vkh v d p h k r v s l v d o s u r j u d p 1

P r w z ulvnu/
xqghuvdaggded khvlvavaj w vshd
z lvk frqilghqf h derxwd fklag vkh
glgqav hwnqrz lq shur q/ p dlqvaj
Df hv

d fhuwaj uhvuyh uhj duglaj vkhlu
lqvdq/ j h q h u d a j u h i h u l a j w k l p
ru khu dv O kh edel O d qg udud
p h q v r q l a j d q d p h 1 V k l v p d n h v
h v s h f l d a j l q v n u h v l a j v k h d w h u v l a
z klfk p hq gr vdn derxw vkhlu
fklaguhq1

Rqh z ulvnu/ fchduj vklqnlaj
ri klv gdxj kvnu dv d vshlilf shur q
dvhgdj/ vdl v kh O d q k d u g d z d l w
irud d y h d a g d f k d a f h w p h h w k h
| r x a j a d g | z k r L x q g h u v a d a g l v
d a h d g | v a n l a j v x q e d v k v d a g
f d u l l a j r q l q v l p l a d u v k r f n l a j
z d j v O D a r v k h u l p d j l a h v k l v q h z
v r q i r a z l a j l q k l v i r r v v h s v
v d l l a j k h l v O a g h g d k d s s | i d v k h u
w k d y h k d g d v r q z k r z l a o
v r p h g d | v a n h p | s a d f h l q v k h
P d u l q h v O

Vkhv dwhuv z rxag dnhd
qrweh hvshfida ydoxded iurp d
pldvaj klw ufdo vdwqsr lqv Vkh
vho xv qrvklaj derxwvkh frxwh ri
vkh z du ru vkh hyhul gdj h{shulghqf h
ri vkh p hq z kr irxj kvl Dwprw
vkh| vkrz vrp h ri vkh p daj sadhv
durxqg vkh z ruag lq z klfk X11
vhuylf hp hq irxqg vkhp vhyhv
gxulaj vkhv | hdu1

Z kdwvkh| ri ihu lqvndg ri
qh z v derxw edvnhv d qg w r r s
p r y h p h q w l v d v h u h v r i v p d a o
j d p s v h v r i v k h z d j v l q z k l f k d i h
d w k r p h z h q w r q / d a g l q v l w v r q v
d w h p s v n g w v k d u h v k d w f r q v l q x l v y
e l d a z l a j i r u h q m | p h q w r i d
e u r d g d k x p d a / | h w s u r i r x a g d
s h u r q d o p r p h q v f l y l d d a v d w k r p h
p d j q h y h u v a d x q g h u v a d a g v k h
v r a g l h u v z d u l p h u h d d v / e x w v k h |
f d q v a j w v k d u h v k h l u r z q q h z v / w
j u r x a g v k h z d a g h u h d a g u h p l a g
k l p r i v k h z r u a g z d l v a j i r u k l p 1
V k h h { l v n h q f h r i v k l v s u r j u d p
v s h d n v h a r t x h q v a j r i v k h z d j q r q 0
p l d v a j l q v l w v r q v v r x j k w w
v x s s r u w v k h v h u y l f h p h q d e u r d g
g x u l a j v k h | h d u r i Z r u a g Z d u l l /
d a g k l j k d j k w v k h x q l t x h d

lqvlp dvh deldv ri d krsvlwo w
w x f k d s h u r q a v d i h d w v k h p r w w
y x a g h u d e d h d a g p r p h q w x v r i
v l p h v 1

O r x k d y h d f k l a g / x v k h
s k r w v v d l g 1 O r x p d j e h i d u d z d j /
l q d a g h a y l u r q p h a w z k h u h v r p h v k l a j
d n h e l u k l v q h d u d l u h d y d a w e x w
v h h / v k d w z r u a g v l w a h { l w w = | r x k d y h
d f k l a g / d a g k h u h l v d s l f w u h r i v k d w
v a j q h z i d f h k

Vkhuv lv hylghqf h vkwvkh
surjudp z dv shufhlyhg lq vkh
vxssruv y h i d v k l r q 1 R q h p d a z u r v h
O l v l a g h h g j u d v i | l a j w n a r z v k d w
z h l a v k h v h u y l f h k d y h s h r s d h d n h
| r x e h k l a g x v O z k l h d a r v k h u
v a v n v / O r x z r q a v n a r z z k d w d
f r a q v a d v r a q l w l v w v h h v x f k
j r r g q h w d a d u r x a g p h O l l a d a j /
d a r v k h u p d a / v s h d n l a j q r g r e w i r u
p d a j = O h w k r s h) s u d j v k l v z d u
z l v k M s d a g h a g v v r r a q v r v k h v h u y l f h
p h q) z r p h q f d a u h v u a q w v k h
a d a g) a y h g r a h v v k h | d g r u h O

Dwklv uhp ryh lq vlp h/ d qg
z l v k q r v k l a j p r u h w j r r a q / z h f d a
r a d k r s h v k h | d a o p d g h l w v d i h d
k r p h / d a g v k d w v k h l u a d v n u d y h v / d a g
v k h d y h v r i v k h l u v r q v d a g g d x j k v n u
j u r z l a j x s l a v k h e x v | | h d u d i v n u
v k h z d u / z h u h k d s s | r a h v 1 V r p h r i
v k r v h f k l a g u h q d n h d v l w a d y h l a v k h
q h l j k e r u k r r g v d a g w z q v d u r x a g
E r w r a d a g v k h E X P h g l f d o
F d p s x v 1 S h u k d s v v r p h r i v k r v h
s k r w v d u h v l w a v x f n h g l a w r a g
i d p l a d a e x p v / d w a h v d y h u r i
k l w v u l p x v n d v s h d n l a j r i v k h z d j
d i h p r y h v r a h y h q l a v k h p l g w r i
z d u v x a q f h u a l q v / d a g s h r s d h u d f k
r x w v r v k h u w r i i h u z k d w f r p i r u w
d a g v x s s r u w k h | f d a j



D a o t x r v n v a n h a i u r p d w h u v l a v k h i r a g h u
O k r v s l v o D l g D w a 1 Z Z l l = V h u y l f h p h a v x
u h s d h v d f n a r z d g j l a j s l f w u h v r i e d e l h v
4 < 7 6 0 7 8 O l a v k h E r w r a X a l y h u m v y D a p a l
P h g l f d o C e u d j D u f k l y h v 1

Ihdwuh

Wkh Flqf lqqdw Fkr dhud Hslghp If ri 4; : 6 dv d l r uf h lq 4<wk Fhqvw ul Xuedq Frp p xqlw G| qdp If v

Wkhrgruh Z 1Hyhwr dh/ SkG
Ghsduwp hqwr i Klvw ul
Z hvvhuq Nhqxfn| Xqlyhuwlw

Gu1WkhrgruhHyhwr dhlvfxuuhqwl d q Dgrnqf wDwlwqWsurihwruri Klwul dwQrwikhuq
Nhqxfn| Xqlyhuwlw d qg vkhXqlyhuwlw ri Flqflqqdw1Ru j lqda iurp Flqflqqdw/ Gu1Hyhwr dh
uf hlyhg klv ED/ P D/ d qg SkG iurp vkhXqlyhuwlw ri Flqflqqdw lq 4<: 91Khz hqwr q w vhu yhd
d q DwlwqWduf klylwr q vkhDæhuwVdelq Duf klyh1X oip dhw / klv vndf klaj f duhu xqir qhg lq
Haj æqg z khuhkhvshqW63 | hdu/ uhwulaj dv DwlwqWsuqlf sdbori ly| eulgj hFrp p xqlw
Fræj h lq Ghyrq1Divhu dnylaj Ghyrq/ khuhw uqhg z lvk klv z lihWlvkd w Flqflqqdw z khuhkh
frqvlqxhv w vndf k1

Dffruglaj w p daj klw uldqv ri p hglflqh/ fkr dhud z dv æd sulp l'uh hslgop lhgx [l| h v'fdn1 Wkh klw uldj udk| ri fkr dhud lv lqghhg ydww gudz lqj vkh vndg| dwhqvr q ri d z lgh erg| ri v fkr ædw z kr kdyh vlqfh vkh 4<; 3v lqfuhdvlqj d irfxvhg xsrq vkh h{dp lqdw r q ri fkr dhudx hslghp lf frqvht xhqf hv r q uhj lraqdo ru æfdo duhdv1 Ht xda l p sr uwlqW fkr dhud uhvdufk dar lqvhuvhfw z lvk nh| klw ulfdo duhdv vxfk dv wdlqvsr uwlw r q/ p lj udlw r q/ sxedf khdox ghyhæ sp hqW d qg xuedq l} dvr q1 Jlyhq lw eur dg yduhw ri lp sdf w/ hslghp lf fkr dhud sur ylg hv d xv hix oedf ngurs w ehvhu xqghu wdlqg krz lw ylvvdw r q frxæg diihfw lp sr uwlqW Df hvr

hp hj lqj frp p xqlw hv vxfk dv vkh Rklr Ulyhu flw ri Flqflqqdw lq vkh 4; : 3v1'4` Rqh ri vkh prw ihduhg glvhdvh ri vkh qlqhvnhqvk fhqvw ul/ fkr dhudx fdxvdw r q uhp dlqhg d p | w h u r x v t x h w v k u r x j k r x w p r w ri vkh fhqvw ul ru vkh p dmulw ri vkhvh | hdu/ vkh p hglfdo frqv hqxv ehdh yhg vkdwp ldv p d z dv fkr dhudx sulqf lsd o f dxvdo dj hqW Krz hyhu/ fdxvhv r vkh vkdq h{sr vxuh w srlvr qrxv edg du/ vxfk dv vkh dfvr qv ri vkh vxq/ p r r q/ d qg wdlw/ dp r qj p daj r vkhuglyhuw vkh r ulhv/ z huh rivnq sur sdj dhwg lq vkh hudx p hglfdo fr u h v s r q g h q f h w h { s æ l l q fkr dhudx i ulj kvixosuhv hqf h1 Hslghp lf fkr dhud iluw dsshduhg lq Hxursh lq 4; 4:/ d qg z dv ehdh yhg w kdyh duhyhg iurp

Lqgld vsuhdglaj dæqj wdg h/ p ldvdul / d qg slq ulp dj h ur xvhu1 Dv vkh fhqvw ul surj uhwhg/ vkh lp sdf w ri frp p huf h/ srsxæw r q p r yhp hqW d qg xuedq dylaj frp elqhg w vhw vkh wdlj h iru d vhu hv ri z ruæz lgh hslghp lf v z krvh prw vlj qlilfdqW z dyhv wuxfn ehvz hhq 4; 5< d qg 4; : 81Wkh ædw p dm u z h v h u q h s l g h p l f u h d f k h g H x u r s h l q 4; < 51 K d p e x u j / J h u p d a j / d n h | l p p l j u d q w h p e d u n d w r q s r l q w s d u l f x æ u d v x i i h u g g x u l a j v k l v y l v d w r q z l v k r y h u ; / 333 u h f r u g h g g h d v k v 1 ' 5 ` D v k l w u l d q F k d u h v U r v h q e h j d w h u w g / Ô f k r d h u d z d v v k h f æ d w l f h s l g h p l f g l v h d v h r i v k h q l q h v n h q v k f h q v w u l / d v s æ j x h k d g e h q r i v k h i r x u w n h q v k 1 Z k h q f k r d h u d i l u w d s s h d u h g l q v k h X q l v n g W æ l v h l q 66

4; 65/ | hørz ihyhu dāg vp dō sr {/ vkh j undwhslghp lf glvhdvh ri vkh suhlyrxv v̄r fhqvxulhv/ z huh qr arqj hu v̄xq̄ qdvr̄ qdosur edhp v̄10^6` Divnu plgcfhqv̄xul vkh vkuhdw ri fkr̄chud v̄l̄p x̄ad̄v̄ng pruh fr̄rugl̄qd̄v̄ng fr̄pp x̄ql̄v̄y uhv̄sr̄qv̄hv/ hvshfldađ dv̄p hgl̄fdox̄qghuv̄el̄qgl̄qj hyr̄ōyhg fr̄qf̄huql̄qj vkh v̄r̄f̄ldo fr̄qgl̄vr̄qv̄ v̄kdw̄l̄qf̄uhdv̄hg fkr̄chud̄x̄ ylux̄dqf̄h dāg gh̄dv̄k ud̄v̄n1 Dv̄ vkh ql̄qh̄v̄nh̄qv̄k fh̄qv̄xul sur̄juh̄v̄hg/ vkh p̄h̄qdf̄h ri fkr̄chud kh̄sh̄g ih̄g vkh x̄uēdq̄ uhir̄up lp̄sx̄ōh dv̄σ̄f̄dod̄uh̄dv̄ σ̄rn̄hg w̄ h̄dp̄l̄qd̄v̄n vkh euh̄gl̄qj j̄ur̄x̄qgv̄ri l̄qih̄f̄vr̄q1

Gxulqj vkhvh | hdu/ fkr̄chud z dv̄ f̄ch̄d̄ud̄ d̄ v̄fr̄x̄uj̄ h̄ v̄kd̄weur̄x̄j̄ kw̄ sd̄ql̄f̄ z kh̄uh̄yhu l̄w̄d̄ss̄hd̄uh̄g1 Vkh lp̄sd̄f̄w̄ri vkh fr̄pp d̄ed̄fl̄ox̄v z dv̄ v̄x̄q̄ gh̄yd̄w̄el̄v̄qj / dāg vkh v̄sh̄hḡ d̄w z kl̄fk fkr̄chud n̄l̄ōhg z dv̄ sd̄w̄l̄f̄x̄ad̄ud̄ iuj̄kv̄n̄ql̄qj 1 Vkh r̄qv̄hw̄ ri v̄j̄p̄sv̄rp̄v̄ eur̄x̄j̄kw̄der̄x̄wer̄x̄w̄ ri ul̄fh z dv̄nūōdn̄h gl̄dūkh̄d/ yr̄p̄l̄v̄qj / dāg f̄ud̄p̄sl̄qj / ex̄w̄l̄wz dv̄ vkh uh̄v̄x̄ōl̄qj / dāg r̄iv̄n̄q̄ ud̄sl̄g/ gh̄k| ḡud̄vr̄q v̄kdw z dv̄ pr̄w̄ vkr̄fn̄l̄qj / iuh̄t̄x̄h̄qv̄el̄ eul̄qj l̄qj gh̄dv̄k z l̄v̄kl̄q d̄p̄d̄v̄nū ri kr̄x̄w̄1 Xsr̄q gh̄dv̄k/ erḡlh̄v z huh iuh̄t̄x̄h̄qv̄el̄ d̄īw̄ f̄x̄ud̄hḡ l̄q̄w̄ d̄ih̄v̄ōsr̄v̄l̄vr̄q dāg z huh v̄x̄ev̄ht̄x̄h̄qv̄el̄ ex̄uh̄ḡ l̄q̄v̄x̄fk d̄v̄w̄v̄n1 Vkr̄vh̄ d̄īih̄f̄v̄ng z r̄x̄ōg

vkulqn̄l̄q̄w̄ d̄z l̄j̄h̄q̄hḡ f̄kd̄ud̄f̄v̄nū ri kl̄v̄z̄khu ir̄up̄hu v̄n̄ō z l̄v̄kl̄q d̄ih̄z̄ kr̄x̄w/ z kl̄dn̄ ux̄sv̄x̄uh̄ḡ f̄d̄sl̄ōōd̄uh̄v̄ gl̄v̄f̄r̄ōuh̄ḡ vkh v̄n̄l̄q/ v̄x̄uql̄qj l̄w̄ēd̄f̄n̄ dāg ex̄h̄f̄ Vkh h̄īih̄f̄wz dv̄ w̄ p̄dn̄h̄pr̄ūv̄d̄v̄ȳ x̄ql̄t̄x̄h̄q̄ ȳl̄v̄ēd̄h̄=sd̄w̄v̄nūqv̄ri erḡl̄q̄ gh̄f̄d̄l̄ z huh h̄{d̄f̄h̄uēdv̄nḡ dāg d̄ff̄h̄ūd̄v̄nḡ dv̄ l̄q d̄v̄l̄p̄h̄ ōd̄sv̄h̄ pr̄v̄r̄q̄ sl̄f̄v̄x̄uh̄/ w̄ uhp̄l̄q̄ḡ d̄ōz̄ kr̄v̄z̄ l̄w̄ri gh̄dv̄k̄x̄ x̄j̄q̄ kr̄ūrud̄q̄x̄w̄v̄nūl̄q̄h̄yl̄v̄d̄el̄d̄v̄ȳ 1^7

Ql̄qh̄v̄nh̄qv̄k fh̄qv̄xul̄ v̄hd̄vp̄ h̄q̄w̄ w̄ p̄h̄hw̄v̄x̄fk d̄kr̄ūled̄h̄ gl̄vh̄dv̄h̄ yd̄uh̄ḡ ryhu vkh gh̄f̄d̄gh̄v/ dāg sur̄ḡxf̄hḡ d̄ fr̄q̄w̄el̄qv̄el̄ f̄kd̄qj l̄qj̄ dūd̄l̄ ri qr̄w̄x̄p̄v̄ dāg Df̄h̄vr̄

uhp̄h̄gl̄hv/ l̄q̄f̄ōx̄gl̄qj̄ d̄ss̄d̄f̄d̄vr̄qv̄ri ȳl̄q̄h̄j̄du/ p̄x̄w̄el̄ug/ ōx̄gd̄q̄xp̄/ dāg f̄d̄ōrp̄hod̄v̄z̄ h̄ōdv̄r̄v̄khu l̄qj̄uh̄gl̄h̄q̄w̄ gud̄z̄q̄iur̄p̄ vkh dj̄h̄x̄p̄d̄v̄n̄ud̄p̄h̄gl̄f̄d̄1 Eσ̄rḡd̄h̄w̄l̄qj̄ dāg d̄vr̄ūw̄nḡ ed̄v̄kv̄ z huh d̄ōvr̄ w̄l̄hg/ ex̄w̄d̄ōz̄ l̄v̄kr̄x̄w̄ h̄īih̄f̄v̄l̄ l̄q̄ v̄n̄up̄v̄ ri f̄x̄ud̄v̄ȳh̄ sur̄sh̄ūl̄hv/ gh̄dv̄k ud̄v̄n̄ v̄kur̄x̄j̄kr̄x̄w̄ vkh fh̄qv̄xul̄ v̄kr̄z̄hḡ d̄w̄ōh̄ yd̄ud̄d̄vr̄q̄ eh̄v̄z̄h̄q̄ v̄kr̄vh̄ p̄h̄gl̄f̄d̄ōj̄ v̄hd̄v̄nḡ z l̄v̄k v̄kh̄vh̄ dāg r̄v̄khu f̄x̄uh̄v̄/ dāg v̄kr̄vh̄ w̄v̄el̄ōj̄ ōd̄f̄n̄l̄qj̄ p̄h̄gl̄f̄d̄ō l̄qv̄n̄uȳh̄q̄vr̄q1

Lw z r̄x̄ōg q̄r̄w̄eh̄x̄q̄w̄ō 4; ; 6 v̄kdw̄ix̄w̄uh̄ Q̄rehō sū}h̄ z l̄q̄q̄hu Gu1 Urehuw̄ Nr̄fk̄ +4; 7604<43, l̄gh̄q̄w̄il̄hḡ vkh fr̄pp d̄ed̄fl̄ox̄v dv̄vkh̄ f̄dx̄v̄h̄ ri fkr̄chud1 Lq̄gr̄l̄qj̄ vr̄kh̄ kh̄sh̄hḡ w̄ fr̄q̄il̄up̄ d̄sd̄v̄kr̄j̄h̄q̄lf̄ h̄{σ̄ōd̄q̄d̄vr̄q̄ ir̄u v̄kl̄v̄ fr̄q̄v̄l̄j̄lr̄x̄v̄ gl̄vh̄dv̄h̄\ h̄w̄hȳh̄q̄ l̄q̄vkh̄ id̄f̄h̄ ri Nr̄fk̄x̄ h̄yl̄gh̄q̄f̄h/ v̄kh̄uh̄ z huh v̄k̄ō sur̄p̄l̄q̄h̄q̄w̄ v̄f̄l̄h̄q̄v̄w̄w̄ v̄x̄fk dv̄ P̄x̄ql̄fk̄x̄ P̄d̄{̄ yr̄q̄ Sh̄w̄n̄q̄rihu +4; 4; 04<34, z kr̄dv̄ ōd̄v̄n̄ dv̄ 4; ; 7 v̄k̄ō sur̄ih̄w̄hḡ d̄eh̄d̄hī l̄q̄p̄l̄d̄vp̄ d̄v̄ fkr̄chud̄x̄ f̄dx̄v̄d̄v̄ȳh̄ dj̄h̄q̄v̄l̄ Dq̄ dḡgl̄vr̄q̄d̄ō v̄n̄hs̄ vr̄z̄d̄uḡv̄ uhd̄ō suh̄ȳh̄q̄vr̄q̄ f̄dp̄h̄ l̄q̄ 4; <6 z kh̄q̄ Gu1 Z̄d̄ōgh̄p̄dū K̄d̄īid̄q̄h̄ +4; 9304<63, sur̄ḡxf̄hḡ vkh̄ il̄uw̄ v̄x̄ff̄h̄w̄ix̄ō yd̄ff̄l̄q̄h̄ir̄uf̄kr̄chud/ z kl̄fk̄ r̄īih̄uh̄ḡ d̄p̄h̄dv̄x̄uh̄ ri kr̄sh̄ ir̄u pruh̄ v̄j̄v̄n̄p̄d̄v̄f̄ fr̄q̄vr̄ōl̄

Dok̄rx̄j̄k̄ h̄īih̄f̄v̄ȳh̄ v̄hd̄vp̄ h̄q̄w̄ q̄r̄z̄ h̄{l̄w̄/ l̄q̄f̄ōx̄gl̄qj̄ yd̄ff̄l̄q̄hv̄ dāg r̄udō uh̄k| ḡud̄vr̄q̄ v̄kh̄ud̄sl̄hv/ fkr̄chud̄ uhp̄dl̄qv̄ d̄v̄h̄ul̄r̄x̄v̄ gl̄vh̄dv̄h̄ z kr̄vh̄ fr̄q̄v̄l̄q̄x̄hḡ suh̄v̄h̄q̄f̄h̄ f̄d̄q̄eh̄ir̄x̄q̄ḡ l̄q̄vkh̄ P̄l̄gḡd̄h̄d̄w̄d̄q̄ḡ Dīul̄f̄d/ z kh̄uh̄ v̄h̄ul̄r̄x̄v̄ h̄sl̄gh̄p̄lf̄v̄ r̄ff̄x̄ūhḡ l̄q̄vkh̄ 4<93v̄ dāg 4< 3v1 l̄q̄ 4<<4 fkr̄chud̄ dj̄dl̄q̄ w̄x̄fn̄ vkh̄ Dp̄h̄ul̄f̄dv̄/ ir̄u vkh̄ il̄uw̄v̄l̄p̄h̄ l̄q̄ 433 | h̄du/ h̄ux̄s̄v̄l̄qj̄ l̄q̄ Sh̄ux̄ z kh̄uh̄ l̄w̄ vsuh̄dḡ w̄ l̄q̄ih̄f̄w̄ vr̄p̄h̄ 733/333

sh̄rs̄d̄h̄ z r̄ūōgz̄ l̄gh̄ dāg f̄dx̄v̄h̄ 7/333 gh̄dv̄k̄v1 Fkr̄chud̄x̄ fr̄q̄v̄l̄q̄x̄l̄qj̄ d̄el̄d̄v̄ȳ w̄ n̄l̄ōz̄ dv̄ r̄q̄f̄h̄ pruh̄ h̄yl̄gh̄q̄f̄hḡ gx̄ul̄qj̄ d̄ 4<<7 r̄x̄v̄ēuh̄dn̄ l̄q̄] d̄l̄uh̄/ z kl̄fk̄ n̄l̄ōhḡ 83/333 uh̄x̄j̄h̄h̄v/ dāg h̄ȳh̄q̄ pruh̄ uh̄f̄h̄q̄v̄el̄ l̄q̄ K̄dl̄w̄ z kh̄uh̄ k̄x̄q̄ḡuh̄gv̄ ri v̄kr̄x̄v̄d̄q̄gv̄ k̄dȳh̄ eh̄h̄q̄ d̄īih̄f̄v̄nḡ v̄l̄q̄f̄h̄ vkh̄ uh̄f̄h̄q̄w̄h̄d̄ūk̄t̄ x̄dn̄h̄1 ^8`

Dv̄ h̄dūj̄ dv̄ 4; 87/ Gu1 M̄k̄q̄ V̄q̄rz̄ ri Or̄q̄gr̄q̄ v̄x̄j̄j̄h̄w̄nḡ v̄kd̄w̄ fkr̄chud̄x̄ vsuh̄dḡ fr̄x̄ōḡ eh̄ w̄d̄f̄hḡ w̄ fr̄q̄w̄p̄l̄q̄d̄v̄nḡ gūq̄n̄l̄qj̄ z dv̄nūl̄ K̄lv̄ l̄q̄ȳh̄w̄l̄j̄ d̄vr̄qv̄ h̄{d̄p̄l̄q̄hḡ z dv̄nū fr̄ōd̄f̄v̄nḡ iur̄p̄ vkh̄ Ulyhū V̄k̄dp̄hv̄/ z l̄v̄k̄ sd̄w̄l̄f̄x̄ad̄ū d̄w̄n̄q̄vr̄q̄

j̄lȳh̄q̄ w̄ v̄kr̄vh̄ v̄x̄ss̄d̄h̄w̄ z kr̄ḡuh̄z̄ v̄kh̄lu z dv̄nū iur̄p̄ v̄h̄f̄vr̄qv̄ ri ūlyhū z dv̄nū q̄r̄wid̄ū iur̄p̄ v̄h̄z̄ dj̄h̄ r̄x̄v̄ōhw̄ sl̄sh̄v1 l̄ur̄p̄ kl̄v̄ uh̄v̄d̄uf̄k/ V̄q̄rz̄ sur̄ḡxf̄hḡ fr̄q̄yl̄q̄f̄l̄qj̄ ḡd̄v̄el̄/ dāg v̄x̄j̄j̄h̄w̄nḡ suh̄ȳh̄q̄v̄d̄v̄ȳh̄ fr̄x̄ūhv̄ ri d̄f̄vr̄q̄> kr̄z̄h̄ȳhu/ kh̄ ōd̄f̄n̄hḡ d̄x̄q̄lȳh̄ud̄ōd̄ d̄f̄n̄q̄r̄z̄ d̄ḡj̄hḡ f̄dx̄v̄d̄v̄ȳh̄ dj̄h̄q̄w̄ v̄x̄fk dv̄ vkh̄ p̄l̄f̄urēh̄ v̄kd̄w̄ fr̄x̄ōḡ eh̄ d̄w̄d̄f̄k̄hḡ w̄ vkh̄ fr̄q̄v̄l̄j̄lr̄q̄x̄ vsuh̄dḡ1

Dok̄rx̄j̄k̄ V̄q̄rz̄ z dv̄r̄q̄vkh̄ ul̄j̄kw̄w̄d̄f̄n/ kl̄v̄z̄r̄un̄ z dv̄v̄ōz̄ w̄ l̄q̄īōx̄h̄q̄f̄h̄ s̄x̄ed̄f̄ kh̄d̄ōk̄ sr̄d̄f̄|/ rū fr̄q̄yl̄q̄f̄h̄ vkh̄ p̄h̄gl̄f̄d̄ō fr̄pp x̄ql̄v̄ȳ v̄kd̄w̄l̄q̄ih̄f̄v̄nḡ z dv̄nū z dv̄d̄vr̄x̄uf̄h̄ ri v̄d̄q̄vp̄ l̄w̄r̄q1 Q̄hȳh̄w̄k̄h̄d̄w̄/ l̄q̄v̄l̄p̄h̄ h̄sl̄gh̄p̄ lf̄ gl̄vh̄dv̄h̄ v̄x̄fk dv̄ fkr̄chud̄ gl̄ḡ kh̄ōs̄ h̄w̄d̄ed̄v̄k̄ er̄d̄uḡv̄ ri kh̄d̄ōk̄1 Dv̄ vkh̄ er̄d̄uḡv̄x̄ suh̄v̄h̄q̄f̄h̄ eh̄f̄dp̄h̄ pruh̄ uhd̄gl̄q̄ d̄ff̄h̄sv̄nḡ z l̄v̄kl̄q̄ fl̄v̄ȳ ex̄uh̄d̄x̄f̄ud̄f̄lh̄v/ vkh̄| fr̄x̄ōḡ ir̄f̄x̄v̄ v̄kh̄lu d̄w̄n̄q̄vr̄q̄ x̄sr̄q̄ lp̄sur̄yl̄qj̄ x̄uēdq̄ k̄j̄j̄l̄h̄q̄h1 Vkh̄ l̄q̄l̄w̄dō s̄x̄ed̄f̄ k̄j̄j̄l̄h̄q̄h̄ ḡuȳh̄ z dv̄d̄nḡ el̄ H̄q̄j̄ ōd̄q̄ḡx̄ V̄h̄f̄uh̄v̄el̄j̄ ri vkh̄ S̄rrū Ōdz̄ Fr̄pp̄l̄w̄r̄q/ H̄gz̄ l̄q̄ F̄kd̄gz̄ l̄fn̄1 l̄q̄ 4; 75 F̄kd̄gz̄ l̄fn̄ s̄x̄ed̄v̄k̄hḡ kl̄v̄ Ūhs̄rūw̄ l̄q̄w̄ vkh̄ V̄d̄q̄l̄v̄el̄j̄ Fr̄q̄gl̄vr̄qv̄ ri vkh̄ Ōder̄x̄ul̄qj̄ S̄rs̄x̄ōd̄vr̄q̄ l̄q̄ Eul̄v̄el̄q̄ z kl̄fk̄ ḡuh̄z̄ d̄q̄ h̄dūj̄ d̄q̄n̄ eh̄v̄z̄h̄q̄ x̄uēdq̄

dylaj frqglwrv d qg glvhdvh1 Krz hyhu/ lq Eulvdlq d qg hahz khuh/ vkh erdugv ri khdak vkdw z huh fuhdvng gxulaj vkh 4; 73v d qg avhu z huh rivng vnp sruduj / aefnhg vkh ixasrz huw ri v d q l v d u j h q i r u f h p h q w d q g i d l d h g w x q g h u w d q g v k h d f v x d o q d v x u h r i g l v h d v h 1 V d n h q d v d z k r d v v x f k e r d u g v z h u h i d l u j l q h i i h f v y h z k h q d q h s l g h p l f w u x f n 1 l q d g g l w r q / a f d o f r p p x q l v j d n d g h u v z h u h i h d u x o r i v k h e d g s x e d f l v j d f k r d u d h s l g h p l f f r x a g k d y h r q r u g l q d u j e x v l q h w d f v y l v h v 1 Q h y h u k h d h w / h y h q l q v k h i d f h r i v x f k d p l v d w r q v / e j v k h 4; 93v v k h e r d u g r i k h d a k f r q f h s w k d g v s u h d g w v k h X q l v n g V a d v n v / d a g v x f k e r d u g v z r x a g l q i x v x u h g h f d g h v f r p s h o x u e d q d u h d v d f u r w v k h q d w r q w v x e v f u l e h w v k h j h q h u d o v n q h w r i v d q l v d u j u h i r u p d v d p h d q v r i g l v h d v h f r q w r d 9

Vkh Flqflqqdw Fkr dhd Hslghp lf ri 4; : 6

Flqflqqdw adw p dnu edwzh z lvk fkr dhd rffxuhg lq 4; : 61 E j v k h e h j l a q l a j r i v k d w g h f d g h F l q f l q q d w z d v v k h v k l u g d n d g l a j l a g x w u d o f l v j l q v k h q d w r q d a g d p d a x i d v x u l a j d a g f r p p h u f l d o e d v h i r u d a h { s d a g l a j q d w r q / i d f w z k l f k j d y h v x e w d a f h w v k h f l v j x f a d l p w e h v k h O t x h h q F l v j r i v k h Z h w t O F l q f l q q d w s r s x a d w r q r i r y h u 533/333 d y h g i r u v k h p r w s d u w l q g h q v h d f u r z g h g k r x v l a j l q v k h f l v j x f h q w d o e d v l q / z k l f k w h v k h g q r u k i u r p v k h h g j h r i v k h R k l r U l y h u i r u r y h u d p l d h 1 F l q f l q q d w z d v d a r d w a d q v s r u w q h { x v d v l w d v d w v k h v n p l a x v r i v k h P l d p l d a g H u h F d q d a / d a g d i v n u v k h 4; 83v l w h { s d a g l a j u d l a u r d g d a n v v h g v k h d u h d w Q h z \ r u n / F k l f d j r / d a g s r l q w v r x v k 1 l q d g g l w r q / y l e u d q w u l y h u e r d w w a d i l f s u r y l g h g e r v k x s u l y h u d f f h w h v w S l w w e x u j k d a g D f h v r

grz qulyhu frqqhvr qv dævkh z dl w Qhz Ruchdqv1

E j v k h 4; 93v q h z p r u h v d o x e u r x v v x e x e v z h u h s a d q v n g d a r a j v k h v x u r x a g l a j k l a v l g h v / z k l f k h { v n a g h g v k h f l v j x v u d g l x v e j r y h u i r x u p l d h i u r p v k h f h q v n u 1 l q d g g l w r q / F l q f l q q d w z d v d f l v j r i l p p l j u d q w / s d u w r i v k h a d v n 4; 73v q d w r q d o v x u j h l q l p p l j u d q w d u l y d a 1 D v v k h f h q v x v i u r p v k h v h | h d u u h y h d h g / 5: (r i v k h a f d o s r s x a d w r q z d v J h u p d a q e r u a / d a g v k h s h u f h q v e j h r i v k h z r u n i r u f h v k d w z d v J h u p d a z d v r y h u 73(1 ^ ` L w z d v v k h v h l p p l j u d q w j u r x s v / p d a j r i z k r p d y h g l q f u r z g h g d a g s r r u f r q g l w r q v / v k d w r i v n q v x i i h u g v k h e u x q w r i f k r d u d x h i i h f w d a g w r n v k h e a d p h i r u v k h v s u h d g r i v k h g l v h d v h 1

Fkr dhd kdg wuxfn Flqflqqdw ehiruh/ duulyaj iluw lq 4; 650671 Vklv iluw hqfrxqvnu surgfxhg ; 64 ghdkv1 Fkr dhd uhv uqhg/ ehvz hqg 4; 7; d a g 4; 83 d a g

f a d l p h g d i x u k h u 7 / 4 4 7 d y h v / d a g d s s h d u h g d j d l q l q 4; 99 z k h q l w n l a t h g d a g d g g l w r q d o 5 / 3 5 ; f l v j u h v l g h q w 1 K r z h y h u / e j v k h v p h r i v k h 4; 99 h s l g h p l f / d a k r x j k d v v h y h u h d v e h i r u h / v k h f l v j k d g h y r o y h g l q v n p v r i l w f r p p x q l v j u h v s r q v h v 1 D a d q L 1 P d u f x v x l p s r u a d q w u h v d u f k k d v l a g l f d v n g d w l w x g h v k d g f k d a j h g d a g v k h v h q h z f l u f x p w a d a f h v O v n p p h g g l u h f v a j i u r p v k h q r v r q v r i f l w h v d v r f l d o x q l w d a g k h d a k d v d g l v f u h v s x e d f s u r e d n p O ^ ; ` D v P d u f x v i x u k h u w a v n g / O v k h 4; 99 f k r d u d r x v e u h d n p d g h l w s r d w f d a j l q h { s h g l h q w d a g g d a j h u r x v w s x u x h f l v j O v a d v n d a g l a v n u h w j u r x s v t x d e e d v z l v k r x w i l u w h u h f w a j

khdak ghsduwp hqwl lq vrp hirup O ^ ^ Vkhuhiruh/ flv j erdugv ri khdak glg qrwvlp sq dsshdu exwz huh d frqfhuvg uhvsrqvh lq djkw ri sr d w f d o d a g s r s x a d u s u h w x u h v 1 l q d g g l w r q / d i v n u 4; 98 v k h u h z d v d f a d u p r y h w z d u g h { v n a g l a j e r d u g s r z h u w w p d n h i r u d p r u h w a d j i x q f v r q d o r u j d a j } d w r q 1 D f f r u g l a j w P d u f x v x d a d d v l v / O v z r f u l w f d o l w x h v O k d g w e h u h v o y h g = O v k h e d w a h i r u p h g l f d o s u l p d f | O d a g v k h O r q v n w e h v z h h q f l v j d a g w a d v n i r u p x q l f l s d o f r q w r o O ^ 4 3 ` V x f k s r d w f d o f r q v n w w / d v z h a d v p h g l f d o g h e d v n r y h u f k r d u d x f d x v h v / p d g h s u h s d u d w r q i r u h s l g h p l f v p r u h g l i i l f x a 1 K r z h y h u / e j 4; 9: d

Fkr dhd kdg wuxfn Flqflqqdw ehiruh/ duulyaj iluw lq 4; 651 Vklv iluw hqfrxqvnu surgfxhg ; 64 ghdkv1 Fkr dhd uhv uqhg/ ehvz hqg 4; 7; d a g 4; 83 d a g f a d l p h g d i x u k h u 7 / 4 4 7 d y h v / d a g d s s h d u h g d j d l q l q 4; 99 z k h q l w n l a t h g d a g d g g l w r q d o 5 / 3 5 ; 1

q h z f l v j k h d a k a d z z d v s d w h g v k d w i l u p d h w a e d v k h g d k h d a k e r d u g z l v k v a { s r z h u w d a g w a d i i w g h d y h u l p s u r y h g v d q l v d u j f r q w r o d a g h q i r u f h q h z k h d a k f r g h v 1 4 4 `

Dakrxjk surj uhv kdg ehq p dgh lq uhirup lqj khdak surylvrq daraj z lvk

r v k h u d v s h f w r i f l v j j r y h u a p h a q w 4; : 3 v F l q f l q q d w z d v z u d f n h g z l v k q x p h u r x v f r q f h u q v / l a f a g l a j s r d w f d o v f d a g d a v d a g u y d a u h v d v z h a d v h f r q r p l f g l y l g h v / z k l f k f u h d v n g d j h q h u d a j x q s d h d v d a q r s h u d w a j h a q l u r a p h a q z k h q v l j q l i l f d a w f u l v h v r f f x u h g 1 V k h q d w r q d o h f r q r p l f u h f w l r q r i 4; : 6 p d g h p d w h u v z r u w d a g f r q w l e x v n g w v k h j u r z l a j a d e r u x q u h w r i v k h s h u l g / z k l f k v d z v k h f l v j d y h u d j h v z h a q v O l y h u h u r x v w a d n h v d | h d u g x u l a j v k h 4; : 3 v 1 H f r q r p l f f k d a t a j h v / s r d w f d o g l v f r u g / d a g a w p d u n h w w f l w h v i x u k h u z h w d a d a g g h g w d j h q h u d o v s l u w r i x u e d q p d a d l v h 1 D v v r f l r a j l w M i i u h | K d j g x w a v n g /

ÔFlqflqqdvdv ihow ehvhhg el
xuedq vrfldolœ/ iurp lqvnp shudqfh
daq survwxvraq w ylrhqw fulph
daq vkh| fulwfl}hg flwv riilfldov iru
ehlqj wr fruxswr ulqfrp shvnhqww
p dlqwdlq rughuÔ^45`

\ hwlwz dv suhflvhq lq vxfk
sr dwf do dgg vrfldo flufxp wdaqfhv
vkdwFlqflqqdvdv œdwwp dnu fkr dhd
dwdfn rffxuhg1 Vkh 4;:6 hslghp lf
sur gxfhg 53: ghdkv rxwri d wvdo
flwv pruwddv ri 8/974 iru vkw| hduf
^46` Dakrxjk vkh flylf khdk
iudp hz run kdg fkdqj hg/ dv glg
flwv h{shfvvraq/ fkr dhd uhp dlqhg
d ghgdg vkudw w p dql œfdo
uhvghqww dgg d fkdj hg sr dwf do
lw xhiru œfdoj ryhuqdfh1

Fkr dhdv Duulydodag Lqihvvdvraq

Vkh 4;:6 fkr dhd hslghp lf
iluw huxsvng lq Qhz Ruchdqv rq
l heuxduj </ 4;:6/ dgg vxeht xhqv
vdyhdg qruw der dug vkh
vndp erdw Mlkq Nlgruh/ z klfk
vxiuhg vkuh fkr dhd ghdkv ehruh
duylqj lq Flqflqqdvrq P d| 56/
4;:61^47` Vkh iluwidvdo fdv z lvk
flwv rujlqv z dv vkw ri Sklœvqh
Jxqgarfn/ dj hg 78/ ri 8: Rdyhu
Vvhhw/ z klfk rffxuhg rq Mqh 47/
4;:6 lq dq duhd fœvhw vkh furz ghg
Ryhu vkh Uklqh duhd qhdu vkh flwv
fhqvut E| vkh hqg ri Mq/ 44:
ghdkv kdg irœz hg/ dgg vkh
glvhdv glgqww ixœ dedv xqvo
Rfwehu4; / 4;:61

Gu l M M Txlqq/ vkh flwv
khdk riilfu/ ehdhyhg/ dv uhdvng
lq klv 4;:6 uhsruw vkw Ôqr
frqhfvrq fdq eh hvœdvkhg
ehvz hqg vkh iluw idvdo fdv ri
fkr dhd dgg d| vndp erdw œdglqj/
udlar dg ghsrw/ lp srwng fkr dhd
sdvnhqww/ ru shwrqv iurp d œfddv
z kuh vkh glvhdv kdv ehq
suhlddaj Ô ^48` Ixukhup ruh/
Txlqqw ylz srlqw z huh vnhq dv
dxvkr utvdyh vqfh kh vnyhg dv d
Df hvr

uhsuhvqvdvlyh ri vkh flwv v riilfldo
sxedf khdk ruj dql}dvraq1 Txlqqw
frqœvraq vxjjhvng vkw Ôkr dhd
uhtxlhg fhvdlq jhrœjldo dgg
p hvnrœjldo frqglvraqv iru lw
ghyhar sp hqwo dgg Ôhvœvng
vkrxjk vkh qhuyrxv v| vnp el
h{kdxvraq/ ihdu/ dq{lhv/ ru rkvhu
ghsuhvqj p hqvo hprvraq>
vkrxjk vkh glj hvlyh ruj dqv el
lp suxghqfh lq hvdqj dgg gulnlqj >
dgg vkrxjk uhvsludvul dgg
flufœdvul v| vnp v/ el lqkdœvraq ri
qr{lr xv ydsru ru ri ylvdvng dgg
lp sxuh dluÔ ^49` Lq dgglvraq/
Txlqqw uhsruw vxjjhvng vkw
Flqflqqdvv 4;:6 erz ho glvrughw
z huh/ shukdsv/ qrw hyhg Ôvœh%
fkr dhd/ dgg kh ixukhu ghfœdhg/
%Vkh hslghp lf ixuqvkhg qr surriv
ri frqvaj lrqhwlqghhg yhu ihz ri
vkh fdvz z huh dw dœ uhrqflœedh
z lvk vkh vkr ul ri frqvaj lrqÔ^4`

Lq frqvadv vkh ihghudo
riilfldo lqxlq lqw vkh hslghp lf/
vkh Fkr dhd Hslghp lf ri 4;:6 lq vkh
Xqlvng Vdvv/ gliuhg lq vnyhudo
vœvœvdo z dlv iurp Txlqqw
dvhwv hqwr i vkh hslghp lf1 Vkh
ihghudo lqxlq z dv xqht xlyrfdo lq
lw fkdj h vkw Ôkh fkr dhd
hslghp lf z dv fduhg iurp Qhz
Ruchdqv w Flqflqqdvr el kxp dq
ehlqj vÔ dgg duj xhg vkw Ôkh iluw
fdvz ri fkr dhd rffxuhg lq
Flqflqqdvr dvnu vkh duyl do ri vkh
vndp erdw Mlkq Nlgruh/ iurp Qhz
RuchdqvÔ ^4;` Vklv grfxp hqvdœr
frqœghg vkw vkh iluw fdvz kdg d
frqhfvrq w vkh vndp erdwœdglqj
dgg rkvhu fdvz eur nh rxwlq vkh
ylflqlv ri vkh iluw dgg vhrqg
fdvz1 ^4<` Vkh qdvraqdo uhsruw
vxjjhvng vkh srweldv vkw
fkr dhd z dv frqvaj lr xv dgg vsuhg
vkrxjk vsflilf frqvœw dgg flwv
œfddvraq1 Vklv frqœvraq vkrz hg
dq hduj dz duhqw ri lqihvrvx
vdqv lvrq/ d ghfdg ehruh
Nrfkœ frqilup dvraq/ dgg ixukhu

duj xhg vkw Ôvdqlvul vflhqfhÔ dv
vnhq lq Hxursh z dv vkh vrœvraq w
vkh ghvœvqj suredp v srvhg el
fkr dhd1

Rq vkh œfdo dnyhœ vkhuh
z huh rkvhu iurp vkh phglfdo
frppxqlv z kr dnhz lv frqvnhng
Txlqqw riilfldo yhvraq ri vkh
hslghp lf ri 4;:6/ dgg/ lq vœu/
hqrwng vkh qdvraqdo uhsruw
yhuglv lru h{dp sdv/ Gu l 11
Grz daj/ d sk| vfldq edvhg dw<v
dgg Clqq vvhv fœvhw w p dql ri
vkh fkr dhd fdvz/ z urvnlq 4;:6/ vkw
vkh Ôsvhvng hslghp lf kdv sdvhg
dœqj urxvri vdyhœ kdv ehq
sur sdj dvng el z dvnu frqvœp lqdvng
z lvk idhf do p dvnu/ kdv dwdfn hg
prwvuhq vkrv dylqj lq œz dgg
furz ghg srwvraqv ri flvhw/ kdv
sur gxfhg lq lw ylvv v dœ vkh
v| p svrp v dgg uhvœv ri vkh
fkr dhd/ dgg lv vkhvruh/ lq rxu
rslqlraq/ qr vqlqj hvv vkw d fkr dhdÔ
^53`

Vqfh lw lv qrz fhdud
xqghuvrg vkw frqvœp lqdvng
z dvnu lv vkh yhkldh prw rivng
dvrfdvng z lvk fkr dhdv
vdqv lvrq/ vkh vœvri
Flqflqqdvr vdvvraq lq 4;:6 kdg d
gluhf wehdulqj rq vkh klwul ri vkh
4;:6 hslghp lf1 Vkh riilfldo Txlqq
uhsruw dvng vkw dvvkh vph ri vkh
rxvœhdh ri vkh glvhdv lq
Flqflqqdvr Ôkh vvhv dgg dahl v
z huh fhdq/ dgg vkh flwv œz dv
jhghudœ lq d idlu vdvul
frqglvraqÔ ^54` Vkh lghd z dv dœr
surprvng vkw Ôkh z dvnu vxssd ri
Flqflqqdvr œz dv, uhj dughg vdp raj
vkh khdk hvvixuqvkhg dql flwv lq
vkh xqlraq P^55` Vklv Ôkhdkl Ôflwv
z dvnu/ iru vkh prwvduw z dv vnhq
iurp vkh Rklr Ulyhu/ dgg vlv z dvnu
z dv dvxphg w eh vdh iru lwz dv
jdvkhuhg iurp vkh fkdqgho eh| rgg
uhfk ri vkr uh gudlqj h1 ^56` Lq
dgglvraq/ w ehvnu glwœv vkh
flwv z dvnu/ :; 6 k| gudqv/ dgg vl{

saxp ldxv ri qhz slshz huh hufvng lq 4; :6/ jlylqj Flqflqqdw 487 pldxv ri wvdo z dnu slsh1 lru vhz dj h sxusrvh/ vkh flv/ vlqfh 4; 8; / z dv glylghg lqv vz r vhsdudvnl glwulfw= vkh rqh dlqj z hww ri luhhp dq/ ehvz hhq Hlj kvk dqg Edqn/ dqg vkh rvkhu frp sulvqj vkdw srurq hdwv ri luhhp dq/ dqg dar vkdwz hwwri luhhp dq dqg vxvk ri Hlj kvk1 lq ervk lqvdlqfhv/ vkh Rklr Ulyhu/ vkh vxufh ri vkh flv v z dnu vxssd/ z dv vkh ilqdouhfv d h iru vkh flv v xqvhdvng z dnu1^57

Dv z dv hvledvkhg vl{ |hdw suhylrxdq/ d ixw vlp h/ shup dqhqw erdug ri khdak z dv hp srz huhg w ryhuwh vkh flv x j hqhudo khdak dqg vdlvdlv dqg el 4; :4 kdg glylghg vkh flv lqv vl{ khdak glwulfw1 W dvlwvkh erdug ri khdak/ lwz dv vkh Qxv ri vkh pdlru w ghvllouirp vkh uhj xadu srdfh ri vkh flv/ ru w pdnh qhz dssrlqvp hqw iru vkh sxusrvh/ vxfk qxp ehv ri srdfhq dv vkh erdug pdl uht xluh iru vkh hqirufhp hqwri surshu vdlvdlv p hdvuhv1^58` Vklv Qdvlvdlv vt xdg Qz dv lq vkh r u xqghu vkh h{foxvlyh frqwr ori vkh flv x erdug ri khdak1 Krz hyu/ gxulqj 4; :6/ vkh erdug x frqwr ori vkh vdlvdlv vt xdg z dv vdlvdlv w vkh Erdug ri Frpplwlrqhuw ri Srdfh/ dqg hiilflhw hqirufhp hqw z dv dssduhqv1 σw1 Lwlv xqfdu z kl vkh vdlvdlv rffxuhg/ exwvkh srdfh frpplwlrqhuw glg qrw vxssruw vkh fhdqxs hiiruw dqg glvuhj dughg Erdug p hdvuhv1 l xwkhup ruh/ vkhuh z huh wr ihz sdwr q hq dvlj qhg dv vdlvdlv lqvshfw w vr dwn z dv dfvxdq df frp sdvkhg1 Vklv vlxvdlv vkr xj k glg qrw r xqfkdahj hg dwkh vlp h/ irufv v z huh ehj lqqlqj w vhh vkh qhng iru vshflilf hgxfvdlv qdo t xddilfdv qv iru vkr v xqghu vnlqj vdlvdlv lqvshfw v1^59` Surihwru P dufxv dqnhg vklv dqg rvkhu Df hv

fulvflvp v w d qxp ehv ri srdvfd lwxhv vkdw durvh lq vkh 4; :3v lqyrqlqj luhj xadlvhv lq vkh frp swr ahuv riilfh/ srdfh ghsdwp hqw erdug ri flv lp suryhp hqw dqg erdug ri hgxfvdlv q1^5: `

Qhyhukhdw/ hyhq lq vkh idfh ri srdvfd idfv qv dqg idloxuh/ ryhu 46/4: 7 qxlvdqfhv z huh uhsruvng gxulqj vkh hslghp lf |hdv lq dflv vkw dxusrvng w eh lq idlu vdlvdlv frqglv q1 ^5; ` Ehvghv sur edhp v lqyrqlqj frqwr ori vkh vdlvdlv vt xdg/ vkh erdug ri khdak dar vxiihug lq 4; :6 iurp d afn ri frshudv q z lvk vkh erdug ri vkh vhz dj h frpplwlrq/ dq hvhqvdo dj hqf lq vkh ghyhsp hqwri dq hiihfvlyh dqg fruglqdvng sxedf khdak srdf l1^5<` Lwz dv dar qrw xqvlv 4; ;< vkw vkh flv uhrpp hqghg vkh frpsxv ul frqghvdlv ri dæ krxvh w vkh p xqlfido vhz dj h vl vhp / d idf vkw j undv khshg vkh erdug ri khdak x uhj xadlv q ri vkh glvsrudo ri krxvkr q z dnu1^63`

Vkh Flqflqqdw suhv surylghg dfvlyh fryhudj h ri vkh hslghp lf vkr xj krw lw frxuh1 Rqd gdj v dnu vkh iluw idvdlv/ dqg lq dgydqfh ri pdqj lq vkh phglfdo frpp xqlv/ d uhsruw dsshduhg z klfk vdvng vkdw Qkh glvhdv z dv sursdj dvng el vkh h{fuhp hqvdo glvfkdj hv ri shvr qv diihfvng el vkh fkrduf srlvrq/ dlghg el σfdo fdxvhv1^64` Vkh Gdl J dhv z hqw rq w uhrpp hqg z krh vfdh sxuilfdv q/ glvqihfv q/ dqg vdlvdlv fhdqvlqj 1 ^65` Orfdo frqglv qv z huh rivng ylylgd ghvulehg dqg æp hqvng1 Uhsruw dsshduhg ghvuleqj qhj dfvng sulyhv/ ilok vrgghq j urxqv/ irxo fhædu/ sruj gudlqhg vxurxqglqj v/ irxo dqg revvxfvng krxvh gudlv/ ghfdlqj dqg

sxvvhv hqwp dnu/ er vk dqlp do dqg yhj hvledv/ dqg xqyhqv dvng/ gdp s/ furz ghg gz hddqj v1 Vxj j hwlr qv iru krxvh fhdqvlqj / vxfk dv vkh xvri txlfn dp h/ frdo vdu fduerdf dflg/ dqg z klv z dvk z huh fluf xadlvng lru sulyhv/ vshflilf irup xadv iru glvqihfv q/ xvlqj hljkw w vng srxqgvri vxskdvri lru lq ilyh w vl{ j dæ qvri z dnu lq frp elqdv q z lvk d slqwri fduerdf dflg z huh dar sxedvkhg1^66` Dv d shvr qdo klj lq hqf dgylv ul / vkh Gdl J dhv vxj j hvng vhp shudqfh/ sxuh gulqnlqj z dnu/ iuhv dqg vxewdlvdo irrg/ uhv dqg edvklqj dv fkrduh suhyhqvdlv hv1^67`

Vkh Gdl J dhv dar z duhg vkdw Q frqfhdo vkh idfvri vkh suhvqfh ri fkrduh lv fulp lqdo dqg vkdw dæ krxj k vkh Qxv kdv frwexvlqhw p hq ri vklv flv vrp h prqh/ lwkdv vdyhg vkh dyhv ri pdqj rixufv hqv1^68` Lq vkh plgwri vkh hslghp lf/ vkh sdshu dar duxhg iru vkh lpp hglvnl frqghvdlv ri vkh flv v vhz huv dv d vns wz dugv lp surylqj vkh flv x sxedf khdak1 Krz hyu/ vkh J dhv ixwkh h{ædlqhg vkh undv q iru vkh kdskd} dug vhz dj h vl vhp dv ehqj Qrw vkh srdf lq Flqflqqdw/ ehfdv vkh flv lv qrw z hæ uhj xadlvng1^69` Vkh suhv dar xvng lw sdj hv w uhp lqg vkh sxedf ri sdvfxadu sur edhp duhdv/ vxfk dv vkh rshq vsulqj rq Orfn Vvhw ehvz hhq Vl{ vk dqg Hlj kvk Vvhw1 Kuh lq vklv ghqvhd sdfnhg dqg lqvdoeur xv vfvdlv q ri vkh flv z dv d qhjl kerukrrg z kuh vkh fkrduh hslghp lf ri 4; 99 z dv xolp dvng vdf hg1^6: `

Vkh j hqhudo vdvnl ri Flqflqqdw v krxvlqj lq 4; :3 z dv uhj dughg dv ghsæ vledh1 W ixwkh frp sdfvnl vkh lwxh/ vkh flv z dv nqrz q dv vkh prw ghqvhd srsvdvng lq vkh frxqvul shvtxduh plch1 Flqflqqdw kdq 4/743 vng hq

krxvhz klfk z huh hdk krp hw vl{
rupruh idp ldhv/ dgg prwri vkhv
exlqaj v z huh vhyhg el d vlqj dh
suly|1 lruw/ shu fhqw ri vkhv
idp ldhv dyhg lq rqh urrp/ dgg
hlj kw/ Okuh shufhqwrri vkhv urrp v
kdg exwrqz lqgrz 1^6;` Xqghu
vkhv frqglwrqv/ 8/333 suly| ydxaw
z huh ghfaduhg qxlvdqfv lq 4;:61
Vkh srweldvhw iru lqihfwrq iurp
vkh lœ frqvalqhg dgg kdskd}dug
glvsrvdo ri kxp dq z dwh z huh
reylrxv1 Vklv uhddv/ z dv uhdvng
lq vkh idfw vkdw 475 rxw ri
Flqflqqdv^v 53: fkrchud ghdkv/ ru
vl{v/ Qlq shufhqwrffxuhg lq vkh
vnhqphqw vhwqj z lvk gxelrxv
vdqlvdlj dp hqlvhw/ z klch rqq 55
ghdkv ru 44(z huh uhrughg lq vkh
flv/ vkrvslvda/1^6<

Lq p hglfdo vhw v/ vkh ofdo
vkhudslhv iru fkrchud^v vhdv hqwlq
4;:6 ydulhg dwh lq vxewdqf h iurp
vkrvh xvng lq hduhu hslghp lf v1
Dokrxjk suhvulsvyh grvdj hv
fkdaq hg ryhu vlp h/ d
frp elqdvrq ri hp hlv/ v/
qdurvlv/ srlvrqv/ dgg
dqv/ vsdvp rgdov z huh
hp sã| hg1 Grfw w
frqvlqxhg w surfœlp
vkhlu vxffhwhv/ rq d
fdvh el fdvh edlv/ lq
vkhpdqj ri vkhphglfdo
mxuqdv ri vkh shurg1
^73` Vkh vxewdqf hv
prw rivng p hqvrqhg
lqfœghg= lshdf/ dfrqlv/ vlqdsivp /
pruskl/ txlqlq/ fdp skr u/
fdœp hœ dvr skld/ dgg elvp xvk 1^74`
Vkh vhuixv sur edhp ri ghk| gudvrq
lq fkrchud fdvh z dv j hqhuda} qrw
p hglfda} dgguhvhg> krz hyhu/ vkh
4;:6 hslghp lf glg z lvqhw d vhw lq
vkh xvri vkh k| srghup lf vlqj h
dv d ghdyhul dj hqwir u suhvutehg
p hglflqh1 Ehlvghv skdup dfhxvfdœ/
sk| vldo skhqrphqd/ vxfk dv
hdfvulflv/ z huh vrp hvlp hv sxw
ir uk dv fkrchud fxuhv1 Dv rivng z dv

vkhdvhw lq vkh sdw/ fkrchud ylvlp v
kdg w frqvhgg iru vxuylydoqrwr qd
z lvk vkh udydj hv ri vkh glvhdv/ exw
dov z lvk vkh plqlvudvrqv ri vkh
grfw w1 Dokrxjk vkh pldvp d
hvr œj| z dv vhdglq œvlqj jurxqg
w vkh plfurvfrsh dgg j hup vkhru /
p dqj grfw w lq 4;:6 vkw ir œz hg
vkh œdhg/ sxuj h/ sxnh/ dgg vz hvdœ
vhdv hqwp hvkrgr œj| 1

Dokrxjk vkh uhvraqv w
vkh 4;:6 fkrchud rxvœudh p dl vhw
srrud kdqgch/ dv z huh vkh
uhvraqv w rvkhu z dvhu erug
glvhdv vxfk dv vskrlg/ lw glg
surgfxh vrp h srvlvvh uhxaw dv
vhw lq vkh lqfuhdlqj ghp dgg iru
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vdqvdvng lqv frqfuhv sr dvlf do
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lq vkh uhj œdvul srzhw ri
lqglylgxdo erdugv ri khdaik ervk
œfda} dgg qdvraqda} 1Vyhudo| hdu
ehiruh/ lq 4;9</ P dwdfkxvhw
hvledvkhg vkh lqlvdo sdvhuq ri

**Vkh j hqhudo vhw ri
krxvlqj lq 4;:3 z dv
uhj dughg dv ghsœr udedh1
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frxqvul 1Flqflqqdv
kdg 4/743 vnhqphqw
krxvhz klfk z huh
hdk krp hw vl{ ru
p ruh idp ldhv1**

vhw khdaik
fruglqdvraq dgg
ryhumj kw ^75` Lq
Dsulo4;:9 vkh Rklr
J hqhudo Dvhw ed
ilqda} ir œz hg vxlw
dgg fuhvng vkh iluw
vhw erdug ri khdaik
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Vkh lpsruvdqf h ri fœdq
z dvhu vxssd lq vkh sxedf khdaik
duhd z dv ilqda} uhfrj ql} hg lq vkh
P dufk 47/ 4; <6 dp hqgp hqw w
Rklr œ 4;:9 erdug ri khdaik
dj lvœvrq1 Kuh lwz dv vdvng vkw
œqr flv/ ylaej h/ frusrudvrq/ ru
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z dvhu vxssd ru rxvhw ri dqj

vl vhw ri vhz hudj h qrz lq xvhw
xqdhv vkh sursvng vrxfh ri vxfk
z dvhu vxssd ru rxvhw iru vxfk
vz dj h vl vhw vkdœ kdyh ehq
vxep lwhg w dgg uhfhlyhg vkh
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khdaik œ ^76` lurp vxfk frqfhuq/
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sœdqw dgg j dœdj h glvsrvdo
idfldvhw vrrq ir œz hg1
lqfrusrudvng dv sdw ri vkh 4;:9
vhw erdug ri khdaik dj lvœvrq z dv
dov vkh uhd} dvraq vkw dœ dffxudv
vhw œ lgh vl vhw ri frœhfvrq/
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Flufxp vœqf hv lq vkh
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frqvœvng w dq xqfruglqdvng
dssurdfk w fulvh fœvng el
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xqvo sdvdj h ri vkh Rklr Ylvdo
Vdwv v z dv Odz ri 4<3; 1^77` Lvdq eh
dij xhg vkw lq j hqhudo fkrchud
hslghp lf v dgg vkhlu ghvxfvvh
lp sdfw rq œfdo frppxqlvhw
surylghg d fulvdo lqlvdo
p hfkdqlv iru vkh uhj œdvul
vnhgv œvhu vhw lq vkh Surj uhvlyh
hudv hduj vz hqvlv fhqvu vhdvfk
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Fkrchud^v julp dgg ghdg
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vkrxjk z huh qrw vœdœ xqghuvrg
dgg dfvng xsrq xqvo vkh vz hqvlv
fhqvu 1 Qhyhvkhdvhw lq vrp h
surj uhvlyh p hglfdo dgg sr dvlf do

t xduwuw/ fkr chud khs hq khij kvnq
uhir up dz duhqhw1 Lq vlp h/ vlv
dwr fldvr q z rxog eh ri whp hqgr xv
ehqhilw lq adhu vz hqvhvk fhqvxuj
vwxjj dnv dj dlqww rvkhu vhu r xv
glvhdv hv vxfk dv vkehuf xavlv/
z kr vh lqihfvr xv udvnh lqfuhdvhg lq
vlp ladud xqkhdok| vrfldo
flufxp wdaqhv1 Khuh/ dv z lvk vkh
edwahn dj dlqww fkr chud/ vkh juh dw
edf vhu r j l w Gu1 Urehw Nrfk
z rxog sadl dq lqvwxp hqvelo ur dh1
Klv glvfryhuj ri vkh vkehuf ch edf lxxv
lq 4; ;5 khs hq vhwvkh wdlj h iru
fr qvdlqlaj vkehuf xavlv lq vkh
vz hqvhvk fhqvxuj 1 78 Dokr xj k
juh dwylfwr uhv kdyh ehq p dgh lq
vkh edwahn dj dlqww lqihfvr xv
glvhdv hv vxfk glvhdv hv uhp dlq
dhgdlqj f dxvh ri ghdk z r uggz lgh1
lq vkh Xqlvhg Vvahn lqihfvr xv
glvhdv hv vxfk dv KLY/ sqhxp rql d/
dqg lq i x h q; d wadsshdulq vkh w s
vnhq dwv ri nlathu diidfvr qv dqg/
dokr xj k dgydqf hq z dvhu dqg
vdqlvdvr q whdvp hqv kdyh riihuhg
fr qvud fkr chud fr qvqxhv w hllw
dqg uhp dlqv d vhu r xv vkuhdww di h
li xqvhdvhg 1 79



Qr vhw=

44 Fkdydhu O hg1 Oh Frkroud=Qd Suhp l'uh Hslgip lhx [l' h' f' d' n'
Qd Ur fkh0kuu r q > 4 < 8; 1 l r u d s d u l d o v p s d h ri vkh yduhg dqg
j ur z lqj udaj h ri Fkr chud wvlg h lq f o x h = Fkdp ehv lvi Vkh
Fr q t x h w r i Fkr d u d1 Qh z \ r u n = P d f p l a d j F r p s d j > 4 < 6; 1
H f k h q e h j P M D i u f d l q v h W l p h r i Fkr d u d = D K l w u j ri S d g r p l f v
i u r p 4; 4: w v k h S u h r q v F d p e d g j h = F d p e d g j h X q l y h u l v y S u h >
53441 H y d q v U M G h d k l q K d p e x j = V r f l h y d a g S r d m v l q v k h Fkr d u d
\ h a v 4; 6304-431 Q h z \ r u n = S h a j x l q S u h > 533- / K d p d q F 1
Fkr d u d = V k h E l r j u s k j 1 R { i r u g = R { i r u g X q l y h u l v y S u h > 533- /
K d j v M Q 1 H s l g r p l f v d a g S d g r p l f v = W k h l u p s d w r q X p d j v l V d q v l
E d u e d u l / F d d i r u l d = D E F O Q L R = 5338 = 4 = 6034 / 544066- / K t p s h o v l
V k h W a d j h F d h r i v k h E u r d g V w h v S x p s = W k q V q r z d a g v k h P | w b j
r i Fkr d u d 1 E h u n h d j d a g O r v D a j h a v = X q l y h u l v y r i F d d i r u l d
S u h > 533: 1 N x g d f n F M Fkr d u d l q S r w l U h y r o x r q d j S d h = D
F x a x u b K l w u j 1 E h u n h d j d a g O r v D a j h a v = X q l y h u l v y r i
F d d i r u l d S u h > 4 < 91 V q r g j u d w P H 1 Z r u g H s l g r p l f v = D F x a x u b
F k u r a r j i r i G l v a d h i u r p S u k i w u j v k h H u d r i V D U M I W i t h u r q /
Q F = P f l d u a d a g > 53441 V q r z g h q I P 1 Q d s d v l q v k h W l p h r i Fkr d u d

4; ; 704-441 F d p e d g j h = F d p e d g j h X q l y h u l v y S u h > 53351
45 P f Q h a e Z K 1 S a j x h v d a g S r s d r i J d a g h q F l y / Q l =
D a f k r i u 2 G r x e d g d j > 4 < 9 5: 61
46 U r v h q e h j F 1 X u e d a g Q d w u h d a g X u e d a g U h i r u p 1 O r x l v V i
Z d u h a / h g 1 D p h u f d a g H y l u r a p h a v e K l w u j 1 P d a g h a / P D =
E a f n z h a s S x e d v k l a j - 5336 / 4741
47 P f Q h a e 5941
48 V k h u p d a g L Z 1 V e h g h G l v a d h v v k d w F d a j h g R x u Z r u g 1
Z d k l a j w r a / G F = D V P S u h > 533: = 671 V h d a r E h u n h p d a g U O d a g
K x j k h v N P 1 V k h F r q t x h w r i l q i h f v r x v G l v a d h v = Z k r D u h Z h
N l g g l a j B D q q a v r i l q w u a d p P h g f l q h 1 4 < 6 4 < 6; = 759075; 1 N r f k W l
G l v a d h P d s v = H s l g r p l f v r q v k h J u r x a g 1 F k f d j r = X q l y h u l v y r i
F k f d j r S u h > 5344 = 205491
49 P f Q h a e 5: 61 V h d a r = U r v h q e h j F H 1 V k h F k r d u d \ h a v V k h
X q l v g V a d h l q 4; 65 / 4; 7- / d a g 4; 991 F k f d j r = X q l y h u l v y r i
F k f d j r S u h > 4 < 95 / M k v r r q V i W k h J k r w P d s = V k h W u j r i
O a g r a w P r w h u i j l a j H s l g r p l f d a g K r z l w F k d a j h g M l h q f r i F l v h v
d a g v k h P r g h u z r u g 1 Q h z \ r u n = U l y h u k h a g W a d j > 53391 I r u d
p r u h f r p s u k i h a q l y h g l v x w r q r i v k h g h y h a s p h a w r i
F l a f l a q d m v E r a d g r i K h d a k v h P d u x v D l l l a q V i n q h w d a g
K h d a k V k h P d u d j h r i v k h P x q f l s d o F r u s u d m r q w v k h S x e d f
l a v h u h w a d g v k h S u r e d p r i S x e d f K h d a k / 4; 53 w 4; : 3 / V k h F a h
r i F l a f l a q d m / ' g l v h u u m r q ' 1 X q l y h u l v y r i F l a f l a q d m 4 < = 666089; 1
D a r P d u x v D l l S a j x h r i W a d j h u = V r f l a b j u r x s v d a g v k h R u j l q v r i
F l y V h y l f v l q F l a f l a q d m F r o x p e x v = R k l r V a d h X q l y h u l v y
S u h > 4 < 41
^ ^ C h y l q h E 1 F r p p x q l y G l y l g h g = J h u p d a g l p p l j u d a q w / V r f l a b
F a t w d a g S r d m f d o F r q d f w l q D a y l e h a x p F l a f l a q d m H k k a f
G l y h u l v d a g F l y l f l g r q w y = S d w u q v r i F r q d f w d a g F r k h r q l q
F l a f l a q d m v a f h 4 = 531 V a d s l r K G d a g V a d u g M B / h g v 1 X u e d a g d a g
F k f d j r = X q l y h u l v y r i l a d q r i v S u h > 4 < 5 = 841
^ ` P d u x v / 671
^ e L e l g / 681
43 L e l g / 4 < 1
44 L e l g / 5471
45 K a l g x M E x v l q h v F l v h q v k l s d w Z r u n = F x a x u b
W a d q v r v l w r q d a g F a t w I r u p d m r q l a q F l a f l a q d m 4; : 304 < 431
D p h u f d a g M x u a d r i V r l r a j | 1533543: -9; -47671
46 P l v k h a e H Z 1 Fkr d u d l q F l a f l a q d m R k l r V a d h D u f k a r a j l f a b
d a g K l w u f d o T x d u l u d 14 < 75 = 845 < 51 V k h w a l o a x p e h u r i g h a l v
i u r p v k h 4; : 6 Fkr d u d H s l g r p l f a q d m q d a d z h u h : / 691 D a r v h e
D a q x d o U h s r u r i v k h F l y G h s d u p h a w r i v k h F l y r i F l a f l a q d m I r u
V k h \ h a u H a g l a j G h f t h u 64 / 4; : 61 F l a f l a q d m = J d j h a h V a d p
S u l a q j H w a l e d v k p h a v 4; : 76; 51 I r u d g l v x w r q r i F l a f l a q d m v
p r w m h y h u h Fkr d u d H s l g r p l f v k d w r i 4; 7 < v h e = H y h u r d v e Z 1 V k h
F l a f l a q d m Fkr d u d H s l g r p l f r i 4; 7 < 1 T x t t q F l y K h u v e j h i
4 < 674-540631
47 T x l q d N M Fkr d u d l q F l a f l a q d m l q 4; : 61 F l a f l a q d m = J d j h a h
V a d p S u l a q j H w a l e d v k p h a v 4; : 791
48 L e l g / 9 < 1
49 L e l g / : : 1
4: ` L e l g / : : 1
4; ` V k h Fkr d u d H s l g r p l f r i 4; : 6 l q v k h X q l v g V a d h v 1 Z d k l a j w r q =

J r y h u p h a v S u l a q j R i i l f h a; : 8-6831
4 < L e l g / 6831
453 L e l g / 6831
454 G r z d a j l 1 % l g l w u d a % l a q F l a f l a q d m Q a f h w d a g R e v h y h u l
4; : 649-8391
455 T x l q a / 9 < 1 U l y h u s r a x v l q z d v v x y h l h g x u a j 4; : 40 5 d a g
i r x q g q r w w e h s r a x v l g 1 V h = U r r p d a g U U 1 X u e d a g J u r z v k d a g v k h
G h y h a s p h a w r i d a g X u e d a g V r z h u V l w l p = F l y r i F l a f l a q d m 4; 3304-481
F l a f l a q d m = U r q a k x S x e d v k h u = 5334-791
456 F l y D a q x d o U h s r u l E r d u g r i K h d a k V h f r u q 16; 31
457 F l y D a q x d o U h s r u l 6; 31
458 F l y D a q x d o U h s r u l F l y Z d u u z r u n v U h s r u l 8381
459 F l y r i F l a f l a q d m F l y l o h j l q t h u v l u w D a q x d o U h s r u l 4; 8; 8; 9; 1
V h U r r p d a g / 7; 1
45: ` P d u x v / 5631
45: ` F l y l o h j l q t h u v l u w D a q x d o U h s r u l 7391
45 < F l y l o h j l q t h u v l u w D a q x d o U h s r u l 73; 1
463 V s u x f n P l 1 V k h G h y h a s p h a w r i v k h F l a f l a q d m K h d a k
G h s d u p h a w 4; 9; w 4 < 5 ^ g l v h u u m r q ' 1 X q l y h u l v y r i
F l a f l a q d m 4 < 9781
464 V s u x f n / 7: 1
465 F l a f l a q d m G d f J d j h a h M q h 4 < 4; : 681
466 L e l g / 81
467 L e l g / 81
468 L e l g / 81
469 F l a f l a q d m G d f J d j h a h V k h K h d a k r i F l a f l a q d m M q h 4: /
4; : 671
46: ` L e l g / 71
46: ` V s u x f n / O F l y K h d a k G h s d u p h a w O 6: 1
46 < Fkr d u d U h s r u l X V / 6691 V h d a r = V s u x f n / 791
473 I r u d v s l f d o h { d p s d v h i l u h i p d a g H i V k h W l p x a d a v
W h d v p h a w f k r d u d 1 H f d r i v P h g f d o l v k u a d i 4; : 666-77407751
474 I r u d g l v x w r q r i v k h w a d a d a g g u x j v h p s a j h g l q v k l v h u d /
v h E l g g d N E 1 P d u d P h g f d l S k l a g h s k l d = O a g v d j d a g
E a h l w r q 4; : 61
475 S d w u r q U 1 V k h G h f d q h r i H s l g r p l f v l R k l r 1 R k l r
D u f k a r a j l f a d a g K l w u f d o T x d u l u d 14 < 7983-6571
476 L e l g / 6581
477 L e l g / 6591
478 D s d u l a d h i i f w l y h y a f f l a q h i r u v e h u f x a v v l g q r w a s s h a d u
x q l o 4-541 D o k r x j k N r f k l v j h a h u a d j f u n g l v g z l v k v k h
l g h a w l f d m r q r i v k h n h l e d f v a u d / d a l a d d a / l l d s s d S a f l q - 4; 450
4; : 6; / s x u r i w k v k h v k r u l v k d a d y l a r f a x v h g f k r d u d d a p r w w
v k u l y j h a v e h i r u h N r f k 1 K r z h y h u d w k h v p h k l v v k r u l z d v q r w
j l y h q v h u r x v f r q v g h u d m r q 1 V k h q r w r q v k d w j h u p v f a x v h g
f r q a j l r q z d v x j j h w l g d v h a d j d v 4879 e j J l u r a d r l U a f d w e r u
+ 47: ; 04886; 1
479 E d u e d u m l W s W a q l a i h f v r x v G l v a d h v K r w S i f v 5343053441
P h g f d s h Q h z v W g d j 53441 D y d a l e d h d w e
z z z z p h g v d s h f r p 2 y l h z d u a f d o 2: 684591 D f f h w h g M q h 4: /
53461

G h q j x h l q G x u e d q / 4 < 5 : =

W k h P d n l q j r i d S x e d f K h d o k F u l v l v

S k l d s G 1 U r w y

E r v w q X q l y h u v l w y J u d g x d w h V f k r r o r i D u w) V f l h q f h v

R q Q h z \ h d u x G d l 4 < 5 : /
 v k h h g l w u l d o s d j h l q
 G x u e d q x d n d g l q j
 q h z v s d s h u / z d u q h g r i d q
 h s l g h p l f l q s u r j u h w = Ö r u z h h n v /
 i r u p r q v k v s d w l w k d v j d l q h g l q
 v h u l r x v q h w Ö d a g Ö l a o g r x e v d h v
 u d j h i x u l r x v d v k u r x j k r x w v k h
 k r d g d l v Ö 4 V a q f h v k h e h j l q l q j
 r i v k h F k u l w p d v v h d v r q / p r u h v k d q
 9 / 6 3 3 k r d g d l p d n h w g l v h p e d u n h g
 i u r p w a d l q v i u r p v k h l q v h u l r u /
 d d j k v l q j l q v k h v h d v l g h w z q
 p x q l f l s d o e r r v h w w x v h g d v Ö k h
 E u j k w q r i V r x v k D i u l f d Ö 5 V k h
 Q d v e l o P h u f x u l x h g l w u l d o z u l v h w
 f r q i h w h g = Ö R x u y l v l w w r x j k w w
 k d y h e h q z d u q h g / Ö e x w Ö h y h q v k h
 S u h w / z k r v e l a n h g x g d d e r x w v k h
 v p d a s r { / k d y h e h q v l d q w
 u h j d u g l q j v k h F k d u h w r q h s l g h p l f Ö
 Ö Ö k h u h y h u v z r r u v k u h d a g d
 j u d p r s k r q h d u h j d v k h u h g w j h v k h u
 v k h g l v h d v h p d l e h v h q l q l w p r w
 y l u x d h q w i r u p Ö 6
 D f h v r

W k h p h a s k r u r i h s l g h p l f
 l a o q h w z d v u l s h i r u x v h l q G x u e d q /
 z k h u h v k h v k u h d w r i z l g h v s u h d g
 g l v h d v h z d v d y h u l u h f h q w p h p r u l 1
 E h j l q l q j l q p l g Ö R f w e h u 4 < 5 9 / v k h
 g l v f r y h u l r i v h y h q f d v h v r i
 i u h t x h q v d i d v e l o v p d a s r { Ö d p r q j
 v k h p r w i h d u h g f u r z g g l v h d v h
 i u r p H x u r s h Ö s o x q j h g u h l g h q w
 d a g p x q l f l s d o d x v k r u l v h v l q w d a
 h l j k v e h h n s x e d f k h d o k f u l v l v 1
 D j j u h w l y h p h d v x u h v w a p s h g r x w
 v k h v p d a s r { v k u h d w e h i r u h
 F k u l w p d v / e x w q r w e h i r u h Ö r p h 9 3
 f d v h v Ö d a g 4 8 g h d v k v r f f x u h g Ö
 d a p r w h { f a x v l y h d d p r q j v k h
 w z q x l a g l d q u h l g h q w 1 Ö 7 R a f h
 v x e g x h g / k h d o k d x v k r u l v h v v k l i v h g
 i u r p s u r v h f v l q j v k h s x e d f w
 s u r v h f v l q j s r f n h w / l w x l q j
 w a d v h p h a q w v k d w G x u e d q z d v d i h i r u
 w a d y h d u w v h h n l q j v x q d a g v h d Ö
 d a g v k h l u f r y h v h g s r x a g v d a g
 v k l a d q j v 1 S x f n l v k d i u d p l a j v k h
 s r s x a d u l w y r i v k h F k d u h w r q l q v k h

a d q j x d j h r i d s x e d f k h d o k f u l v l v
 f d a h g w p l a q v k h 4 6 v p d a s r { 0
 u h a d v h g h g l w u l d o v v k d w u h f h q v d
 d s s h d u h g l q v k h v d p h v s d f h 1 Ö 8
 S h u k d s v u h d g h w v k r r n v k h l u k h d g v /
 f k x f n d g t x l h v d / r u h { k d d g z l v k
 u h d h i d w k h f r p s d u d v l y h d j k v a h w r i
 v k l v d i i d f v r q 1 D a h s l g h p l f k d g
 e h q d y h u h g / q r Ö t x u r s h d q v x
 f r q w a d f v h g v p d a s r { / d a g v k h
 k r d g d l v h d v r q x p h u l p d n l q j d a g
 p r q h l p d n l q j z h u h l q i x a o v z l a j 1
 E x w z k l d h G x u e d q l v h v d a g
 k r d g d l p d n h w g d a f h g / d a r v k h u
 h s l g h p l f z d v e h j l q l q j w p d w 1
 D v v k h f d d h a g d u w x u h g r y h u /
 g h q j x h i h y h u w r n k r a g l q v k h
 z d u p / p r l w f r d w e l o s a e l l q l q d a g
 d u r x a g G x u e d q 1 D w r s l f d o g l v h d v h
 f r q v l g h u h g v h p s r u d u l d g h e l d v a d l q j /
 e x w q r w g h d g d / g h q j x h l a i h f v r q v d w
 i l u w z h a q x a q r v l f h g / v k h q
 x q u h p d u n h g / e x w q h y h u k h d w e x l a v
 w h s l g h p l f v f d d h 1 D p l g v k h
 v x p p h u r i 4 < 5 : x k h d y l u d l q v d a g
 7 3

kljk khdw uhvlgqww vwxjjdng w frqwr o vkh dngv h|sw prvtxlrv vkwvwdqvp lwhqaj xh1 Rqd lq adv P d|/ divnu vkh duvdo ri z lqvnu vnp shudvuhv/ glg vkh hslghp lf vxevlgh1 Vxp p d| uhsruw lqglfdvng vkwvghaj xh Qdihfvng d duhd h{vqglaj derxw73 p ldnv iurp Gxuedq/Oudvng vkh ofdohfrqrp | / dgg uhvxoing lq Qderxw 83/333O hvlp dvhg fdvhv dgg 94 gluhfvj dwdvexvledh ghdkv1^9 Lq frqvudvvr vkh vp dssr{ rxveuhdn/ vkh ghaj xh hslghp lf glvsursruwr qdvnd diihfvng vkh wz qv z klvn uhvlgqwr1 Uhsruw revhuyhg vkwvQhdud kda ri vkh Hxurshdq srsxavrq ri Gxuedq z dv lqihfvng/O z klh ghaj xh fdvhv lq vkh lqglqd dgg Diufdq frppxqlvhw z huh hvlp dvhg dpraj Qqd derxwrqh0 vngvk ri vkhlu xqp ehvO^: H{dfv} ilyh prqvkv divnu p dnlqj djkwri QVkh Fkdudvvrq Hslghp lf/O vkh vdp h hglvudodsaj h riihuhg qhlvku pluk qru phvskru= Qkh vzr hslghp lf v ri vkh sdw vz hoh prqvkv kdyh jlyhq lw ^Gxuedq` d vrp hz kdwxgh vkrfnO^:

Rqh wz q1 Hljkwprqvkv1 Vz r yhu gliihuhqwglvhdvhu1 Vz r p dnhgd glvsursruwr qdv exughv ri glvhdvhu1 Vz r supdulq diihfvng frppxqlvhw z lvk xqht xdvwdqglaj lq vkh udfhOvudvhlhg vrfhv ri hduj vz hqvlhv fhqvuj Vrxvk Diufd1 Dgg rqh txhwrq=z kdwp dnhv d sxedf khdk fvlvB Vp dssr{ z dv rqh1 Ghaj xh ehfdp h rqh1 Krz dgg z k|/ lq 4<5:/ z dv ghaj xh ufrjql}hg dv d vhuixv vkuhdvwdq p dgh d qrvldeh glvhdvB Edvhg supdulq rq uylhz ri vkh gdlq hglvrqv ri vkh Vkh Qdvo P hufxuj -khuhdivnu P hufxuj / Lduj xh vkwvkh hslghp lf v fdd/ kxp dq vxiihulaj / dgg vkh sxedf fadpru ri z klvn flv}hqv/ frqvlexvng w vkh ufrqvghudvq ri ghaj xh1 Krz hyhu/ suhvuxv jurxqghg lq vkruvuhp hfrqrp lf avhv dgg Gxuedq av huvuhp lqgxvudo dsvludvqv z huh vkh dhdglaj uhdvqv z k| khdk dxvkrulhv dedagrqhg d avh}Odluh/ dnvOvxq0 lwr rxvuh vdwqh dgg ufrjql}hg ghaj xh d d sxedf khdk fvlv1

Gxuedq lq 4<5:

Lq 4<5: Gxuedq rffxslhg d ofdvraq nww z hww ri vkh lqglqd Rfdq vdwg up p hg vkr uhdq dgg Df hvr

qrwk ri vkh wz qv sul}hg kduru +ljxuh 4,1 Vklv ofdvraq O ehv hq ehdfk dgg ed| O frqvlexvng w vvhudo ryhuadslaj p xqlfido lghqvhw= uhfvhdvraq jurxqg/ vdwqsvr uvdvraq kxe/ dgg idng daj lqgxvudo vvh1 Orfdvng rq vkh surylqfh ri Qdvdov vxevrsldo frdvlosadlq/ Gxuedq hqm| hg avj vxp p huv dgg vkruv plq z lqvnu1 Vkh wz qv idyruvdeh fdp dvh/ z dup z dvhv/ eur dg ehdfkhv/ dgg krwh udfaj yhqxv pdgh lwd srsxav kr dgd| ghvwdvraq iruz klvnuv iurp Vrxvk Diufdv lqvnuvru gxulaj vkh Fkuvp dv vhdvq/ Hdvnu ehnd/ dgg vkh vrxvkuq khp lvskhv Mqhv0 Dxxvwx lqvnuv1^:

Iurp vkh Erurxjk ri Gxuedq irxqglaj lq 4;87/ vkh wz qv iruxqv z huh vdnhg rq lw survfvng kduru dgg lwr fdsdflv w z hvrp h vkslaj 1 Gxuedq z dv z hoo vlvdvng avj hvledvkhg vdwg urxvnu1 Rq Vrxvk Diufdv hdvnuq frdv vkh wz qv z dv idyruvdeh srvdvqh g iruvdgh z lvk vkh lqglqd vxfvqvqhqv vhd vdiilf flvdaj Diufd yld vkh Vx} Fdqd/ dgg Hxurshdq yhvho urxqglaj Vrxvk Diufd exqg iru Dxxvud/ iruz klvk vkh Vx} urvnu surylghg qr dgydqvaj h1 ^43` Z lvk frdo duylaj el udlo iurp Jxvavdg/ Gxuedq kduru z dv dq hvhqvdo ufrddaj vrs gxulaj vkh dj h ri vhdv vksv1 E| 4<5:/ vkh udc d| vkwz hqhg lw z d| xs ryhu vkh hvf dusp hqv kdg eravuhg Gxuedq vlv qliilfdqh dv d vdwqsvr uvkxe iruvkuh ghfdghv/ frqghvqj vkh wz qv grfnv w vkh ofvduyh plqv dgg exj hrlqj flv ri Mkdaqhvexj ofdvng pruh vkw 833 np lqadq1

Gxuedq kdg avj ehq d fradvraq srlq dgg surfvhvj fhqvnu iru djlvxvuh surgxv jurz qrq Qdvdov vxevrsldo frdv hvshfida vj du1^44` Exwgxulaj vkh lluw Zruag Z du/ ixvkuh lqgxvud}dvraq ehjd w rffxv dkrxjk vkh pdxidf vclaj vfv w uhp dlqhg vp dssr ^45` Z klh wz qv dhdghv d{lxvq ghvuhg pruh lqgxvud O dgg riihuhg d vxshuru srudq frpshvlyh z dvhv dgg hdfvflv udvnu O vrp h lqgxvud dv fkrv rvku ofdvraq

ehfdv avdg z lvk lq vkh Erurxjk z dv vdfv dgg h{shqvlyh dgg p xqlfido udvnu z huh kljk1^46` Lq 4<5:/ Gxuedq vdwglaj dv dq lqgxvudo fhqvnu lq lw rz q djkv uhp dlqhg pruh dsvludvraq vkw uhd}dvraq1

Srsxavng el 456/333 shrsd/ vkh Erurxjk z dv ghqvhd vhwng/ khpp hg0q el vvhudo ri qdvudo ihdvuhv= vkh rfdq w vkh hdw vkh ws ri vkh Ehud Ulgjh w vkh z hvv vkh Xpj hq Ulyhu w vkh qrwk/ dgg vkh kduru dgg Xp elv Ulyhu w vkh vrxvk +ljxuh 4,1 Vkuh sup d| jurxsv ri shrsd pdgh vkhlu krph z lvk lq vkh frqilqhv ri vkh Erurxjk lq 4<5: = Qxurshdqv +8</933,/ lqglqv +54/5; 9,/ dgg Diufdv +75/433,1 Vkh p dnuv ri Qxurshdqv z huh ri Hjdvk edfnj urxqg O dkrxjk vkh lqvhdvqj svhvqhfr i Qrruz klvnuv z dv d{lxvq qvng1 P d| dyhg rq vkh vhd0dlaj vgh ri vkh Ehud Ulgj h rrvku hdydvng vs hv1^47` Vkh lqglqd frppxqlv fhqvuhg rq vkh avdg qhdu J uhl Vvhwvraq vkh z hvnuq p d| lqvri vkh wz qv fhqvnu1 ^48` Qdudvnx qhdu vkh Xpj hq Ulyhu w vkh qrwk/ z huh krph w p d| irup hu lqghqvuhg lqglqd avduhu1 Diufdv dylaj lq vkh Erurxjk z huh prv p d d z runhv hqj dj hg lq fdvdo avdu/ avqg ul exvlqhvhw/ ulfvkdz uxqlaj / dgg frqvudvz run1^49`

Dqvku 433/333 shrsd dyhg lq vkh vvhq shvOuedq duhdv avj vkh Erurxjk vrxqgdvhu1 ^4: ` Z klh vkh Gxuedq Vz q Frxqlodq lw p xqlfido khdk ghsdvp hqv rshdvng z lvk lq vkh Erurxjk/ vkh juhvnu Gxuedq

duhd dgg vkh srsxavraq fhqvnu rq vkh frdvlosadlq w vkh wz qv qrwk dgg vrxvk z huh dgp lqlvuhg el d sdvkvz run ri dgp lqlvudvlyh nvlvlgfvrqv1 Lq hdk ri vkh vvhq shvOuedq glvulfw/ Erdgv ri Orfo Dgp lqlvudvraq dgg Sxedf Khdk z huh vkh uhsvrvledh hqvhwv1 Vkh Qdvlyh uhvuyhv/x krph w d avj h srudvraq ri Diufdv lq vkh surylqfv/ z huh xqghu vkh dgp lqlvudvraq ri vkh Qdvlyh Diidlv Ghsdvp hqwdqg lq vrp h vhwaj v lqfvghg plvraq d| p hglfdo svhvqh h1 l lqad/ vlvh vkh jryhuqdg h

wdf lqj / t xduqvwqh/ dqq ydfflqdvw q
ehj dq vkwgdj dqq frqvqxhg xqwo
vkh æwv fdvh fnduhg hj kw z hnv
ævhu1 Vkh vkuhdwri vp dæsr{ sxw
vkh p dklqhu ri fvlv t xlfnd lqw
p r v r q1

Lq frqvudw/ ghvslv
hslvrghv ri ghaj xh0nh læghw lq
4; <9/ 4<35/ 4<47/ dqq ævñ vkh
suhylrxv vxpphu/ z khq ghaj xh
ihyu dsshdug lq dqq durxqg
Gxuedq lwz hqwxqhp dunhg lq vkh
P hufxuj iruvhyhq z hhnv1^59` Lq dq
lqvhuylhz lq ævñ Mlqxdj 4<5:/ Gu
Sdun Urw/ ri vkh Xqlrq Khdoak
Ghsdwp hqw qr vng Ôd frqvlghudeh
dprxqwri ghaj xh/Ô vhhp lqj d w
glvshoz ruulhv vkwuhf hqwlqf undvhu
lq vkh lqf lghqfh ri ihyu lqglfdvng d
jdvkhuqj hslghp lf ri lqioxhq}d1
^5: ` Vkh qhz v vkwdlqioxhq}d fdvhu
z huhihz dqq plq z dv d vj qlilfdqw
dvxudqfh dhw vkw d d ghfdgh divhu
vkh 4<4; lqioxhq}d sdqghp lf
fælp hg 633/333 dyhv lq Vrxvk
Diulfd1 ^5; ` Xqvr xedng el vkh
suhvqfh ri ghaj xh/ Urw uhyddng
vkwdfdvhu kdg ehq uhsruhg lq vkh
duhd ehru Fkulwp dv/ dqq æfd}hg
Ôhslghp lfvÔ kdg rffxuhg lq vkuh
frppxqlvhu rxwlg Gxuedq/ hdk
æfdvng dæqj d gliihuhqvwadq dqh
dndylqj vkh Erurxjk1 ^5<` Vkh
sulpdj phvdjh iurp khdoak
dxvkrulvhu z dv hp skdv}hg z lvk d
æljh vxevvñ= ÔQr Fdxvh iru
Dæup Ô^63` Lq hduj 4<5:/ ghaj xh
z dv d qxlvdqfh/ qr wd vkuhdv

Vkhuh duh vhyhudo uhdvrqv
z kl khdoak riilfdov lq Gxuedq glg
qrwlqlvda frqvlghu ghaj xh Ôdxvh
irudæup Ô Prvwlj qlilfdqv Ô dv
vkh lqglylgxdo dhyho Ô doakrxjk
vrph vxiihuhv h{shuhqfhg Ôhyhuh
survudvvrq dqq gheldv/Ô ghaj xh
z dv Ôhærp idvdoÔ^64` Lq vkh hduj
vz hqvhwk fhqvud/ prw ghaj xh
lqihfvvrqv wrn rqh ri vz r irup=
hvkhu d plq/ qrqvshlilf iheulh
læghv rivng lqglvraq xlvkdedh iurp
rvkhu ihyhu/ ru vkh pruh vhyhuh
Ôævlfdo ghaj xh1^65` Vkh pruh
vhyhuh irup/ z klfk rffxuhg dhw
iuhxhvud/ hduqhg vkh glyhdv vkh
qdp h Ôeuhdnærqh ihyhuÔ iru lw
lqvhuqh h h0rfnhw p xvdh/ erqh/
dqq mlqw sldq1 ^66` Yrplvqj/
vz ræh q d p sk jæqgv/ dqq udvk
z huh dæv frpprq dqq/ dnh vkh
ihyhu/ vxvda uhrvghg z lvkld d
z hhn1^67` lxæfrqyddhvf hqfh frxæ
vñh Ôvkuh w irxuz hhnvÔdqq z dv

I LJ XUH4=P DS ri GXUEDQ iurp durxqg 4<631Vkhgdunhqhg vsdfhlv vkh
Erurxjk ri Gxuedq1 Vkhvxurxqglqj duhdv duh vkhshu0æuedq glwulfw

vwxfvuh iru vkh Xqlrq ri Vrxvk
Diulfd glg qrw lqfoxgh vkh
hvædvkphqw ri surylqfido khdoak
dxvkrulvhu/ vkh qdvvrqdo Xqlrq
Khdoak Ghsdwp hqwz dv uhsr qvledh
iruvkh surylqfhæv uxododuhdv1

Fvlv yv1Qxlvdaqfh

Edvhg rq lw æqj klwvuj ri
ghydwvvrq lq Hxursh dqq shulrgf
hslghp lf v lq Vrxvk Diulfd/
ehj lqqlqj lq vkh 4: 33v/ vp dæsr{ Ó
frqvaj lrxv/ vsuhdg iurp shurq0w0
shurq/ dqq srhvqvda idvdo Ó z dv
d sxedf khdoak fvlv rq gdj rqh1
^4; ` Vkh glyhdv kdg qrfxuh/ vsuhdg
sulpdj vkrxjk vkh h{kdævvrqvri
vlp swp dlv vxiihuhv/ dqq næng w
xs w 63(ri shrsh lqihfvng1^4<
Vp dæsr{ z dv dq læghv w eh
suhvqvhg/ prqlvuhg/ dqq
djjuhvlvhdj frpedvng1^53`

Vkh vdfvfv dqq wræw
suhvqhw dqq iljkw vp dæsr{ z huh
z hæ hvædvkhhg dqq kdg vkh irufh

ri æz = frpsævruj qrvilfdvvrq ri
dqj vxslflrxv fdvhu/ lvrævvrq ri
lqihfvng shurqv/ wdf lqj ri dæ
frqvdfw/ phglfdo revhuydvvrq ru
txduqvwqh/ dqq ydfflqdvvrq ri dæ
lqidqv ehru 46 prqvkv/ fklæuhq
dqq dgxæv hyhuj ilyh |hdv/ dqq
xqydfvlqdvng shurqv lq dqq
durxqg d frqilup hg rævæuhdn1 ^54`
Lq plg0Rfwehu 4<59/ lw z dv vkh
qrvilfdvvrq ri d srvedh fdvhu ri
vp dæsr{ vkwdsurpsvng vavii iurp
Gxuedqæv p xqlfido Khdoak
Ghsdwp hqw w ylvw vkh lqglq
Eduudfv dw Xpjhql Ó z khuh
urxjk d 933 shrsh uhvlgg lq fæv
txduvhu1^55` W vkhlu glvdj/ vkh
glvfrvuhg Ôhyhq ghilqlvñ fdvhuÔ
^56` V{ lqglq uhvlgqhw dqq rqh
Diulfdq z huh læ dqq kdg ehq
vlp swp dlv dqq lqihfvvrqv iru dw
dhdvd z hhn1^57` Vkh vxevvñv lq
Vkh QdvdoP hufxuj wæv vkh wvuj = Ôæ
irudvhdvd z hhn>srdfhjxdug rq
lqglq eduudfv>gdqjhu ri ixvuh
vsuhdg Ô ^58` Lvrævvrq/ frqvdfw

eh| rqq vkh shwr qdo uhv sr qvleldw/ qduudwlyh/ redt xhq fulwfl}lqj vkh p xqlfIsddw/ e| ux|qj vkh Ôh|qghqf| lq GxuedqÔ w ylh| ghqj xh Ôur p d vr uwri idv d wsr lqwr ri ylh| / d v d vhdv r qdoi hyhuz klk/ li vkh w z q lv œfn| / z lœ f dxvh d wvñ vhdv xv lœ qhw d qg z lœ lq d q| hyhqw vrr q eh ryhuÔ^86

Vkh vdp h hglw udo w wxfn r q vkh fux{ ri vkh fulv lvœ xlv d qf h lwxh/ z kdw p l j kw eh f dœ h g/ Ôk ghqj xh sdu d gr{ œ Ôk h uhdœ xqir ux qd vñ v klqj der xw ghqj xh lv v k d w l w h i i h f w d u h q h l v k h u g d q j h u r x v h q r x j k w p d n h l w d q d œ d u p l q j g l v h d v h r u p l œ q h q r x j k w d œ z d q | e r g | w w h d w l w z l v k l q g l i i h u h q f h Ô ^ 8 7 K h u h d i v h u / l q f u h d v h g h g l w u d o s u h v x u h i h œ r q v k h p x q l f I s d d w / d v v k h s x e d f f r q y h u d w r q z l g h q h g w l q f œ g h p r u h v k d q v k h s h w r q d o d q g q h l j k e r u d u h v s r q v l e l d w h v r i k r x v h k r œ g h u 1 l u r p p l g P d u f k v k u r x j k P d j v k h P h u f x u j f u l w f l } h g v k h p x q l f I s d o K h d œ k G h s d u p h q w i r u l q d f v y l v / d q g l q h i i h f w y h q h v 1 M w e h i r u h D s u d p x q l f I s d o k h d œ k d x v k r u l w h v d q r x q f h g s r d f | f k d q j h v v k d w l q f œ g h g d s u r p l v h w p d n h g h q j x h d q r w i l d e h l œ q h v e h i r u h q h { w x p p h u / v k h w œ l l q l q j r i v f k r r d k l œ u h q w f d u j r x w d q w 0 p r v t x l w p h d v x u h v / d q g v k h s u h s d u d w r q r i d f r p s u h k h q v l y h s u h y h q w r q s œ d q i r u v k h i r œ z l q j | h d u 1 ^ 8 8 ` E x w e h i r u h v k l v f k d q j h l q s x e d f w œ l q f h r q h l q v h f w f l g h e u d q g p r y h g w f d s l v œ d } h r q v k h s x e d f g l w d v l w i d f w r q z l v k v k h k h d œ k g h s d u p h q w s d w l y l v / f d n y h u d œ f h g v k h l u d g v z l v k d v œ j d q h v k d w z d u q h g / Ô g r q r w z d l w i r u v k h d x v k r u l w h v w v œ n h d f w r q Ô + l j x u h 7, 1 ^ 8 9 ` V k h u h q p d n l q j r i g h q j x h l q w d s x e d f k h d œ k f u l v l v z d v x q g h u z d j 1

P dnlqj d Sxedf Khdœk Fulvlv

D frqvwœd w r q r i i d f w w p d g h g h q j x h d s x e d f k h d œ k f u l v l v l q 4 < 5 : 1 V k h p r w y l v l e d h r q h v z h u h v k h h s l g h p l f œ v f d d d q g v x i i h u l q j 1 E j v k h e h j l q l q j r i P d j / v k h p x q l f I s d o k h d œ k g h s d u p h q w h w l p d v h g v k d w 6 3 / 3 3 3 f d v h v k d g r f f x u h g z l v k l q l w e r u g h u 1 ^ 8 : ` E j M q h / v k h P h u f x u j h g l w w e h d h y h g v k h w x h i l j x u h z d v Ô r q v l g h u e d k l j k h u Ô ^ 8 : ` H y h q x q d g r w h g / v k l v w œ l w l f u h s u h v h q w d w œ j j h u l q j D f h v r

exughq ri glvhdv/ diihfwqj r qh lq ir xu uhv lghq w l q d e r u r x j k k r p h w 456/333 shr s d h 1 ^ 8 < ` D u h s r u w l q v k d w u d q l q v k h M x u q d o r i v k h V r x v k D i u l f d q P h g l f d o D w r f l d w r q v k d w | h d u f œ l p h g 7 3 / 3 3 3 f d v h v d v d f r q v h u y d w y h i l j x u h i r u v k h w z q r i G x u e d q d a g v x u r x q g l q j d u h d v / d a g

I L J X U H 5 = N R P R D g /
I h œ x d u j 5 4 / 4 < 5 : 1

d v x e v h t x h q w l q v h u q d w r q d o g l v h d v h v x u y h l œ d q f h u h s r u w i l { h g v k h h w l p d v h g f d v h v r q v k h Q d v œ l o f r d w œ l o s œ l q d w d e r x w 8 3 / 3 3 3 1 ^ 9 3 ` V k h v h d u h h q r u p r x v q x p e h u 1

E h k l q g v k h v h h w l p d v h v z h u h v k h h { s h u l h q f h v r i f r p p x q l w h v d n h S x v œ d p œ K l œ v k d w u h s r u w h g r q P d u f k 4 w œ Ô k h h s l g h p l f w l œ v h h p v w e h u d j l q j l q v k h g l w u l f v Ô d a g Ô v y l v l q j h y h u j k r p h l q w x u q Ô ^ 9 4 ` V k h i r œ z l q j p r q v k / G x u e d q œ d h g l q j D a j d f d a q / D u f k g h d f r q K h j z r r g œ K d u l v s r n h v l p l œ d u j d e r x w v k h w z q /

u h p d u n l q j / Ô l g r x e w l i v k h u h d u h p d a j i d p l d h v l q v k h e r u r x j k v k d w k d y h h q v h u d h v f d s h g Ô ^ 9 5 ` l q p d a j k r p h v Ô z k h u h v k h e d w h z l v k d h g h v h j | s w r y h u i d h v k d a g e œ r g s œ l h g r x w Ô v k h h { s h u l h q f h r i d q h z v s d s h u f r q v l e x w u / Ô P r v k h u Ô f r x œ g k d u g d k d y h e h q x q l t x h = Ô d w r x u k r x v h / z h d u h l q v k h v k u r h v r i g h q j x h = v k h v r q r i v k h k r x v h / v k h f r r n r i v k h k r x v h / d a g d y l v l w u d œ œ l g œ z P œ ^ 9 6 ` l r u p d a j / v k h k r p h z d v q r w r q d d n h l v l v h r i l q i h f w r q d a g d i i d f w r q / e x w d œ r d v l v h r i i d l œ u h / i u x v w d w r q / d a g e œ d p h 1 V k h œ p h q w r i r q h k r x v h k r œ g h u z d v s u r e d e d z l g h d h f k r h g = Ô l k d y h x v h g N R P R ^ d e u d a g q d p h l q v h f w f l g h ` j d œ u h / d a g l q v s l v h r i v k l v / r q h e j r q h / z h k d y h j r q h g r z q z l v k l w + i l y h x s w g d v h , Ô ^ 9 7 ` V k h v f d d r i v k h 4 < 5 : g h q j x h h s l g h p l f k h œ h g p d n h l w d s x e d f k h d œ k f u l v l v 1

V k h p x q l f I s d o k h d œ k g h s d u p h q w f œ l p h g Ô k h y d w p d m u l v / r i f d v h v Ô z h u h p l œ q h q r x j k v k d w Ô r q i l q h p h q w w e h g z d v q r w q h f h w d u j i r u p r u h v k d q v œ r r u v k u h g d j v Ô d a g r a q d Ô d v p d œ s h u f h q v œ j h Ô z h u h v h y h u h 1 ^ 9 8 ` l i r œ w 4 3 (r i h w l p d v h g l q i h f w r q v z h u h v h y h u h / v k h q 7 / 3 3 3 0 8 / 3 3 3 s h r s d h r q v k h Q d v œ l o f r d w p h w z l v k f r q v l g h u e d h v x i i h u l q j 1 R q h v x e p l w r q s x e d v k h g l q v k h P h u f x u j l q D s u d h p s œ | h g d g h v f u s w y h d v h u d u j d s s u r d f k w g h v f u l e l q j l q i h f w r q / x v l q j s h w r q l i l f d w r q w f r q y h l v k h h { s h u l h q f h r i v h y h u h g h q j x h =

D v n l q q l k d a g j u l s v | r x d w k h e d f n r i v k h q h f n 1 V œ z d v k h i l a j h u w s u h w v k h p v h y h v l q w | r x u f u d q l x p 1 1 l u h v h p v w e x u w i u r p h y h u j i l a j h u s 1 V x g g h q d / d v v k r x j k e j d j k v œ l q j i œ v k / v k h v k r r w d a g g d a f h v r p h g h p r a l f d o g d a f h d œ r q j | r x u v s l q h 1 V k h l f h d a g i œ p h d q v œ j r a l } h h œ f k v k h u l q | r x u e d f n 1 l q v k h g œ u n g h w v k d w k d v i d œ h q | r x w œ x j d h w u h œ l q | r x u e d f n e r q h 1 L w l v r i q r d y d œ V k h e r q h / z k l f k d v e h t q | r x u f k l h i w œ l l q d i h / f u x p e d v d a g u h x v h v w p d l q v œ l q | r x / h y t q l q d u f x p e h q w s r v l w r q 1 ^ 9 9 `

Z k l d h v œ g l q j w z d u g p h œ g u d p / v k l v g h v f u s w r q f r u h v s r q g v w v k h u h s r u w r i r q h G x u e d q g r f w u v k d w s d w h q w v h d u x œ d w œ g k l p v k h l i h o v d n h v k h l z h u h e h l a j v k u d v k h g 1 ^ 9 : ` X q g h u v k h v h f l u f x p w œ l q f h v / e r d u g l a j k r x v h n h s h u w z h u h

fulwfl}hg iru dndylaj vxiihuhv dā qh
Ōru gdlv zlvkrxw uhfhylaj
dwhqvr qŌ dāg vkh dufkgdfrq
revhuyhg vkdw ghaj xh
Ōryhuexughqhg shrsch zlvk
grphwlf gxvhw lq plqlwulaj w
vkh vlnfŌ ^9;` Ghvslv ōz
pruadw/v/ vkh ylveldw/ ri sdq dāg
gheldw/ fdāhg lqw txhvw/ vkh
Ōhāj xh sdudgr{x dāg frqvlexvng
w vkh hslghp lf x uhfrj qlvrq dv d
fulvlv1

Vkh vshflif srsxāvrq
prw diidfvng gxulaj vkh 4<5:
hslghp lf dāv frqvlexvng w vkh
hdvchw/ ri ghaj xh w d sxedf
khdak fulvlv1 Prwghaj xhŌxiihuhv

I LJ XU7=NRP R Dg/ P dufk 59/ 4<5: Ō
ŌGr QrwZ dwirvkhDxvkrvhw
w vāhDfvrqŌ

z huh z klvñ1 Uhsruw ilch di vnu vkh
hslghp lf hwlp dvng vkwqhdud rāh
lq vz r Ōxurshdqvx kdg frqvdfvng
ghaj xh/ z klch shukdsv rāh lq vng
lāglādv dāg Diufdqv ehfdp h lāf
^9<` Vkh uhsruvng glvlexvvrq ri
glvhdvñ lv qrvāedñ1 Dāg d elw
sx}}dāj 1 ^3` Lq vurslfdō σfdvrqv
z khuh ghaj xh lv hāghp lf d
glvfusdqf| ri vlv vjsh ehvz hāq
qhz hu Hxurshdq duvdyv dāg
qdvlyhŌerūq uhvghqvw frxāg eh
h{sādlqhg dv vkh uhxāvri lp p xqlw/
σfdo uhvghqvw dftxlūg iurp
fklāgkrrg lāihvvrqv1 ^4` Exw
ghaj xh z dv qrwhāghp lf lq Gxuedq/
dāg vkhuh lv dwhh uhvvrq w ehdhv
vkdw vjqlilfdqvw pruh Diufdqv
vkdw z klvñv dftxlūg lp p xqlw/
gxulaj vkh frqvlghuedē vp dāhu
ghaj xh rxvūhdnvlq 4<59/ 4<47/ dāg
4<351 Rq vkh rvkhu kdāg/ dftxlūg
lp p xqlw p d| kdyh dp lvng

dssdfdvvrq w vkh ōz hu lāflghqfh
ri glvhdvñ revhuyhg dp rāj lāglādv1
Ghāj xh z dv hāghp lf lq p dā| flvhw
rā vkh lāglādv vxefrqvlqhw/ vr vp h
lāglādv surēdē duvlyhg lq Vr xvk
Diufd z lvk kdūgŌz rā lp p xqlw w
ghaj xh1 Exwvklv h{sādqdvvrq fdq
rāq sdvldā| dffrxqvw iru vkh
gliihuhqfhv qrvng lq Gxuedq/
ehfdxvh/ el vkh 4<53v/ vz rŌvklūgv ri
lāglādv lq Qdvāoz huh erūq lq Vr xvk
Diufd1^5` Māfh vkh prwreylrv
elrāj lfdō idfvw vhhp xqdnhd w
dffrxqwiru vkh vnhz hg glvlexvvrq
ri glvhdvñ/ vkh uhvvrq p d| dh
hāvz khuh dāg lāylvñ ixvkhuh
lāyhvñj dvvrq1

Vkh ilāglāj vkdw z klvñv
z huh glvsursruvrqdvñd diihfvng el
vkh hslghp lf fruhvraqv w prw
phqvrqv ri vkh udfh ri ghaj xh
vxiihuhv lq vkh P hufxū 1 Ixvkhuh/
glvfxvvrq ri vkh hslghp lf lvādj hq
devhqw iurp vkh]xā qhz vsdshu
lāqj d vāh Qdvāo dāg vkh lāglādv
z hnd lāglādv Rslāvrq1^6` P hufxū
uhsruw iurp qhjkerrgv ru
vxurxāglāj ylādj hv lāfāghg
frpp hāw dnñ Ōxlvñ d xpehu ri
z hāhqrz q uhvghqvw duh grz q
z lvk vkh frpsādlqŌ vhd Ylhz,/
Ōqhdud vkh zkrch ri vkh z klvñ
srsxāvrq kd v ehq diihfvngŌ
vāqj ddw/ ru Ōuhvk fdvhv duh
rffxulāj fklhīd dp rāj Hxurshdqv
vhdh,Ō ^7` Vkh iluw lāvhw flgh
dgyhulvhp hāw vkdw h{sdfvlw/
phqvrqhg ghaj xh w vāo lv
surgxv qrvng vkdw Ō733 ri 5/333
hdvfwū lq rāh frqvlwchqf| Ō
hdvfwū ehqj z klvñ surshu/Ō
rz qhw Ō glg qrvvrñ lq d uhfhq
hdvvrq Ōz lāj w vkh hslghp lf ri
Ghāj xh lhyhuŌ^8` Ehfdxvh z klvñ
Gxuedqvlvñ z huh vr khdyld
diihfvng/ vkh surqrxqfhp hāw dāg
ghedvñv lq vkh P hufxū z huh qrw
derxw rvkhuh dāg vkh shufhlyhg
Ōvkhuh x exw z huh hāj dj hg el vkh
srsxāvrq vxiihulāj prw iurp vkh
glvhdvñ1 Vklv gliihuhg p dnhgd
iurp vkh vp dāsr{ rxvūhdn lq vāvñ
4<59/ lq z klfk qhdud dō vxiihuhv
z huh iurp vkh lāglādv frpp xqlw/
exw rāq d ihz z hārii lāglādv
yrlfv frxāg eh irxāg lq vkh
sxedf dvvrq1 Li ghaj xh kdg
glvsursruvrqdvñd diihfvng
Gxuedq w lāglādv frpp xqlw/ rāh
z rāghw li vkh sxedf glvrxvuh
durxāg vkh hslghp lf z rāg kdyh
frqhf vng p rvt xlw Ōerūq hāhw w

vkh udfldo vhwrvjshv ri lāglādvx
xqvāvlādv kdelw dāg dylāj
frāglvvrqv frpp rāq lāvrnhg
gxulāj vkh vp dāsr{ rxvūhdn/
udvkhuh vkdw vkh qhjkerrūq
lāglādvx do uhvraqvldvhw ri
z klvñ, p lggchfādv
ŌrxvkrāghvŌ Dv lzw dv/ dz klvñ
srsxāvrq z hāsrvlvrqhg
srdfvdā| dāg sudfvhg lq
fkāqhdāj glvāvldvvrq vkrxjk
vkh sxedf p hālxp ri qhz vsdshu/
surēdē frqvlexvng w vkh Khdak
Ghsdvp hāw uhyvdo rā vkh
hslghp lf1

Xālv dvñd vkrxjk/ ghvslvñ
vkh phulwri vfdch dāg vxiihulāj dāg
vkh fāp ru iurp z klvñ uhvghwklv/
vkh prw vjqlilfdqvw idfvw lq
ghaj xh w hvdēdvkphāw dv d sxedf
khdak fulvlv lq 4<5: dsshdw kdyh
ehhā hfrqrp lf1 Z khq vkh P hufxū w
hālvdo sdj h iluw ghvūhg vkh
khdak ghsdvp hāw Ōdvādvwsrlāw
ri ylhz Ōdāg z lāqj qhw w dhwvkh
hslghp lf uxq lv frxvhw/ vkh
dj xp hāw z dv qrw ālg rā
kxp dāvlādvj urxāgv1 lāvhdg/ vkh
hslghp lf w Ōhfrqrp lf hihfwŌz huh
flvng dv Ōhulrvhārxjk w fdāirud
z krchkhdvng hiiruw w fādu vkh
Gxuedq duhd ri vkh prvt xlw
p hādfh/ dāg nhs lwf dāvŌ^9` Vkh
P hufxū hālvw sdvng lāw vkhlu
frāp d sdudj vsk iurp vkhlu
vlvnu sdshu/ Vkh Dgyhulvhu/
xqdedvkhgd iudp hg lq p dnhw
āj lf=

Dwvkh yhū ōz hwhvlp dvñ ily vkrxvdāg
z d h hāghw lq vlv vp dāvz q kdyh ehq
rxwri frpp lvrq iru derxwd z hñ1 Lq
rvkhuh z rāg/ ily vkrxvdāg z hñv ri
surgxvlyh hiirwkdv ehq glvfw σvw
vkh vzw q1 Lq dgglvrq/ vkhuh lv w eh
fdāxāvng vkh lp sdūhg ylādvj gxulāj
frāydvfhqf/ vkh glvrj dā| dvvrq ri
z d hkrxvñ/ vkrs dāg riilfh rzlāj w
ghsvng vāiv/ dāg vkh glyhulvrq ri ilāqf hv
w grfvw dāg fkhplw vkdw z rāg
rvkhuzlvñ eh lq flvāvrq lq dñw
āj xērv fkdāghv Vkh vkslg lfrqrp lf
z dvñ ri ghaj xh fdq eh fkrāfāng lq vxfk
vñp vdvrxj kww p dñd hādv dyhexvlqhw
frpp xqlw ghvālv lwrāg qyhu dāz d
uhshvvrq ri vkh vklāj 1^: `

K huh vkh vj p svp Ō ulhāvng
Ōhāj xh sdudgr{x Ō qhlvkhuh
gdāj hrvh hārxjk w dālv/ qru
p lāg hārxjk w lq qru Ō z dv vāng
dz d| lq idyru ri dā xqht xlyrfdo

dj xp hqw dj dlqww Ôkh vxslg hfrqrp lf z dwn ri ghaj xh1 Z lvkla dz hhn vkh vdp h vsdf hfdahg rq vkh Fkdp ehur ri Frpp hufh dgg lqgxwulhv w suhvxuh vkh p xqlf sddvly wz dug dfvr q1^;`

Z khq vkh Fkdp ehur ri Frpp hufh khag vkhu dqxdo p hlvaj vkh iræz lqj prqvk/ vkh dvrfl dvrq glg qrw h{sdflvq} dgguhv p xqlf sdo lqlv dlvh1 Exw lw suhvlghqw/ P uf J xqgholaj hu/ glg ghfuj vkh hslghp lf xw lp sdfw rq exvlqhw lq vkh wz q1 Kh hvlp dvhg vkw Ôkh gluhf w w z runhu vkrxjk a vwltp h/ dgg w hp sã| hu vkrxjk a vwhuylf hv/ p xwuxq z hoo lqw vl{ ilj xuhv z khq h{suhvhg lq vhu daj Ôdag Ôwdhdw93 shuf hqwr i vkrvh hp sã| hg lq z kdw duh vrp hvlp hv riilf daj ghv fuleh dv Ôdlqixo rffxs dvr qv Ô kdg valnq vfn ddyh1^<` Erglv dgg exvlqhv z huh edvuhg e| vkh hslghp lf1 Dgg vkh erglv diihfvng z huh qrw rqq vkrvh dwvkh sz hgg ri vkh z dj h v f d d h1 E| ævñ P dj/ dv fr r dhu vñp shudvuhv duhyhg dgg vkh 4<5: hslghp lf ehj dq w hee/ d gh d j dvr q iurp vkh Fkdp ehur ri Frpp hufh dgg lqgxwulhv/ vkh P dwnu Exlghuvx Dvrfl dvrq/ dgg vkh Uvhdvuhv Frxqflop hww lvk vkh Wz q Frxqflo w euhi vkhp rq vkh hfrqrp lf hiifw ri vkh vp dæsr{ dgg ghaj xh rxvuhdñv1^;3` Vkh wz q xw exvlqhv uhsuhvqhvdvlyhv lqvlvng vkw vkh p xqlf sddvly pryh dj juhvlghq w Ôlvhdvñsurr ix Gxuedq/ dgg sãghj h vkhu vxssruw iru vlv dj hgg d1 ^;4` Vkh qxlvdqfh z dv qrz f d d u j frqvlguhg d vkuhdw Ó r q h vkw ghp dqghg surdf vlyh suhyhqv r q1

Exw qhdvuhp Ôfrqrp lf z dwn x z dv qr vkh p ruvdu vkw dwer xqg w j hvkhu vkh wz q xw sr d v f d o h v d e d v k p h q w errvhuw/ qhz vsdshu hglwuw/ dgg s f d o f d s l v e l o t Ghaj xh vkuhdvñhg vkh ylv r q vkhvh frqvw x h q f l h v v k d u h g r i G x u e d q x l q g x w u l d o i x v x u h 1 L q v k h æ v ñ 4 < 5 3 v / v k d w y l v r q l q y r o y h g d q r y h u w s l y r w i u r p e h d f k w e d | d a g v k h e h d h i v k d w Ô k h x o l p d v h g h v l q | r i S r u w Q d v e l o d h v l q l w v h d g | h { s d q v r q l q w v k h l q g x w u l d o p h v r s r d v r i V r x v k D i u l f d t Ô ^ ; 5 ` D w z q p d g h d g r z q D f h v r

Ghslvñvkh p hulw ri v f d d h d a g v x i i h u l a j d a g v k h f æ p r u i u r p z k l v h u d g h v k l s / v k h p r w w l j q l i l f d q w i d f w u l q g h a j x h w h v e d v k p h q w d v s x e d f k h d a k f u l v l v l q 4 < 5 : d s s h d u w k a y h e h q h f r q r p l f 1

sd|p hqwr q vkw ghv l q | v k u r x j k l q y h v p h q w l q æ d g u h f æ p d v r q d u r x q g v k h k d u e r u / d q h z j u d y l a j g r f n / j u d l q h d y d v u w / d a g f r d o h t x l s p h q w l q f u h d v h g f d s d f l v y i r u h d f w f l v y s u r g x f v r q / d a g d q h z z d v h u v f k h p h v k d w z r x æ g v r r q s u r y l g h d p s d h z d v h u i r u l q g x w u l h v 1 ^ ; 6 ` V k l v s d v k w s u l p d f | d a g s u r v s h u l y f r x æ g q r w e h h a g d a j h u h g e | k r x v h Q z h a d a j p r v t x l w r v 1

Lq lw hglwudo eduudj h dj dlqww vkh khdaok ghsdwp hqw lq ævñ P dufk dgg Dsul d vkh P hufxuj z ulvhuw p dgh f d h d u v k d w v k h p r w w l j q l i l f d q w w r x e d h z l v k g h a j x h z d v v k d w l w v k u h d v ñ h g h G x u e d q x w a r a j 0 v h u p s u r v s h f w 1

Z kdwrkshz lœ Gxuedq kdyh ri h v e d v k l a j l w h o d v v k h j u h d w l q g x w u l d o f h a q v h u r i v k h X q l r q l i v k h y l v d v y d a g s u r g x f v y h h i i l f h a q | r i d æ f æ v h v r i z r u n h u l q v k h w z q d a g g l w u l f w d u h f r a q w e d v e d v s s h g e | d a g x d a j u h f x u h q w h s l g h p l f v r i g h a j x h i h y h B Z l œ q r w p d a x i a f v x u h v i l j k w v k | r i v k h s æ i f h B ^ ; 7

Vklv frqfhuq p dnhv sællq vkw dvsludvrqv iru dq lqgxwuldo ixvuh z huh vkh p r w w l j q l i l f d q w i d f w u l q v k h u h f r q v l g h u d v r q r i g h a j x h d v d s x e d f k h d a k f u l v l v 1 ^ ; 8 ` O d | l a j f æ l p w v k d w l q g x w u l d o g h v l q | d a h d g | u h t x l u h g v k d n l a j r i i Ô r q y h a q w r q d o z l v g r p x d e r x w v k h v u r s l f d o z r u n h u d a g v k h l q i o x h q f h r i h a y l u r q p h q v l V k h d g g h g e x u g h q d a g w l j p d r i p r v t x l w 0 e r u q h w u r s l f d o g l v h d v h f r x æ g q r w e h f r x q v h q d a f h g 1

Vkh vkrxjkw kvd ethq dgydqfng iurp hvz khuh vkw vkh khawri vkh Gxuedq vxp p h u h g x f h v k h f d s d f l v y r i l w z r u n h u g x u l a j v k d w s h u r g 1 V k l v l v w e h g r x e v n g / e x w l v l v q r w w e h g r x e v n g v k d w d q d a g x d o g h a j x h h s l g h p l f l q f r a q w f v r q z l v k v k h v x p p h u k h d w x q g r x e v n g d z r x æ g k a y h v k d w h i i f w d a g l i v k l v h s l g h p l f e h f r p h v d s h u p d a h q w i h d v x u h r i v k h G x u e d q | h d u l w z l œ s u r y d y h j v h u r x v k d q g f d s l q r x u f r p s h w l r q z l v k r v k h u w z q v i r u w d g h d a g l a g x w u l 1 ^ ; 9 `

K h u h d h v v k h p r w w l j q l i l f d q w u h d v r q z k | v x w e l l q h g s u h v x u h z d v d s s d h g w p d n h g h a j x h d s x e d f k h d a k f u l v l v 1 O y h v f d q e h

vkuhdvñhg1 Vxiihulaj fdq rffxul lqioxhqvdo frpp xqlvñhv fdq udlv khæ P r q h | d a g p d a q r x x w f d q e h a w l Exw vkh ixvuh p xw eh ghahqhg Ó s d w f x æ u d l i s u r i l w p l j k w e h p d g h v k h u h 1

Frqfæv r q

Z khq ghaj xh ihyhu wuxfn Gxuedq gxulaj vkh iluwpr qvkv ri 4<5: / lwz dv frqvlguhg Ôar f dxvh irudæup Ô D q x l v d a f h / q r w d f u l v l v 1 V k h g l v h d v h x w a z f d v h p r u e d v y / v k h d p l v n g v l } h r i s u h y l r x v g h a j x h r x v e u h d n v / v k h l u h j x æ u d a g l q i u t x h a q w l p l a j r i h s l g h p l f v / d a g v k h y l u x v x w a d a q v l w l r q e | d k r p h 0 g z h a d a j p r v t x l w v s h f l h v / d n g p x q l f s d o k h d a k d x v k r u l v h v w l q l v d a j d g r s w d æ l w h j O d l u h d s s u r d f k 1 V k l v w w r g l q w e l u n f r q w e d w w w v k h d y h o r i p r e l d } d v r q v k d w d f f r p s d q l h g v k h v p d æ s r { r x v e u h d n r q d d i h z p r q v k v e h i r u h 1

Gxulaj vkh fulvdo z hhnv z khq vkh hslghp lf z dv exlaj lqj dgg prvt xlw ghqvñhv z huh uds l g d l a f u h d v l a j / v k h D f v a j P h g l f d o R i i l f h u r i K h d a k d n f v k u h g k r x v h k r æ g h u v k u r x j k v k h s u h v d e r x w v k h l u s h u r q d o u h v s r q v e l d v y w h d p l a d v h d n g h v h j | s w e u h g l a j v l v h v / e x w g l g q r w r u j d a j } h r u s u r p r v h d e u r d g h u s u r j u d p r i l q v s h f v r q v 1 V k l v s r v x u h æ v h u f k d a j h g / x a g h u h v f d æ v l a j s x e d f s u h v x u h d a g f d æ i r u v k h K h d a k G h s d u p h q w w u h d w g h a j x h d v d s x e d f k h d a k f u l v l v 1

Z khq vkh ævwghaj xh f d v h v z h u h v æ a h g / d x v k r u l v h v h w l p d v n g v k d w 8 3 / 3 3 3 s h r s d h k d g v x i i h u h g i u r p v k h g l v h d v h l q d a g d u r x q g G x u e d q 1 E x w v k h v k h u v f d d h r i v k h h s l g h p l f z d v r q h r i d f r q w h æ v l r q r i f r a q w e x v l a j i d f w u w v k d w g h p r a q w u d v n g v k d w g h a j x h v k r x æ g e h h a j d j h g d v d v k u h d v l V k h d v r f l d v n g k x p d a q v x i i h u l a j d a g s x e d f f æ l p r u i u r p v k h g l v s u r s r u l r q d v n d j d i i h f v n g z k l v h f r p p x q l v y z h u h d o r l a i o x h q v d o t

Lq d frqvw h æ v l r q / q r w d æ w e l u w d u h h t x d o t H f r q r p l f f r q f h u q v z h u h i r u h p r w l q d w h p e d a j d f r d d v r q r i e r r v h u w / a f d o s r d w f l d a q / f r p p h u f h / d a g l a g x w u l v k d w l q P d j / g h p d a g h g v k h Ô g l v h d v h Õ s u r r i l a j Ô r i G x u e d q d a g m l q h g z l v k v k h W z q F r x q f l o w d i i l u p / Ô l r r g S x e d f K h d a k p h d a v J r r g E x v l q h w Ô ^ ; ` Exw Ó d w d

vlp h z khq Gxuedq z dv vklivlqj lw vjkw iurp krdgd| uhruw w lqgxvwdl srw Ó vkh Qruwk Vælu vkwjxlghg vkh gulyh w suhyhqw ixvuh ghaj xh rxvæhdn z dv vkh guhdp ri d survshur xv lqgxvwdl ixvuh1 D ylvraq rhrsdugl}hg el hslghp lf vurslfo dglvhdv dqq vkh frqirxqqlqj prvtxlwv vkwvsvhdg lwl Ghaj xh ehfdp h d sxedf khdak fulvl ehfdxvh Ôdihj xduq'ljaj` vkh juhdxvuh ri vkh erurxjk lv vkh sudprxqw vlvn ri vkh Khdak Ghsdwp hqvîÔ^;`

Vkh hqvkvxvldvp iruglvhdvho surrilqj vkw uhvævng iurp vklv hslvrgh lq Gxuedqæ klwruj idæv vt xduhd dæqj vkh urxvñ w vkh Gxuedq Erurxjk Erxqgdulhv Frpp lwrq/ vkh h'vñqvrq ri vkh pxqlfssddvæ frqwr o ryhu vkh vhyhq vxurxqqlqj shu'xuedq duhdv dihz |hdw ævhu/ dwhp sw w dssd vkh 4-56 Qdvlyh Xuedq Duhdv Dfwr vkrv qhz d dgghg vsdfhv/ dqq vkh irufhg uhp rydæv dqq prghuqlw sædqlqj hihfvng dw vkh lqgxvwdl vlvn dwwkh khdg ri vkh edl 1

Exwrq Mqh 4/ dævkdæd lq vkh ixvuh1 Vkwgd| vkh P hufxuj æp hqvng/ Ô qh ri vkh dwhu/ vkrxjk xuj hqwsuredhp v ri vkh prp hqvlv vkwri frqylqlqj Vrxvk Diulfd vkw vkh ghaj xh hslghp lf lv dwdq hqg'î Ô^; <` Gxuedq z dv vkwæd w z q el vkh vhd dqq furz gvri vhdv qdohixj hhv idhqlqj vkh fræg Klj kyhæg z lqvhu z huh h'shfvng w vrrq dæj kwdvkvk fhqwdæ vdlq vlvvrq1 Vkhuh z dv p huul p dnlaj dqq prqh| p dnlaj w ærn divhu' Dqg shuksv Ó li vkh judp rskrgh vkwæ z runhg Ó d dwhv Fkdudhvvrq1



Qrvhv=

^4` Vkh Fkdudhvvrq Hslghp lf 1 Vkh Qdvæ P hufxuj 1 Mqxdul 4/ 4<5: 1

^5` Vkrxvdqgv Ylvvqj Gxuedq1 Vkh Qdvæ P hufxuj 1 Ghfhp ehu 63/ 4<591 Lq vkh Hp sluh0vr dnhg hduj ghfdghv ri vkh vz hqvthvk fhqvul/ errvhuw ri Pxl|hqehj dqq Fdpsv Edl dæv fælp hg vkh dsshævvrq Ôkh Euj kwq ri Vrxvk Diulfd Ôl Vkh ghvulsvrq z dv surplqhqv dssdhg w Gxuedq lq vkh vdyho dfrxqwri Eulvkv mxuqddw K1 Kdp lavq |jih=|jih KK1 Vrxvk Diulfd Wgd|/ zlvk dq Dfrxqw ri Prghuq Df hvr

Ukrghvd/ 4: 41 Vhh dæv/ Suhvvrq QZ k| vñ U1 Frqvwxfvng Ohlvuh Vsdfh= Vkh Vhdvgh dw Gxuedq1 Dqqdæv ri Vxvulp Uvhduf k15334>5; =8; 408<91

^6` Vkh Fkdudhvvrq Hslghp lf 1 Vkh Qdvæ P hufxuj 1 Mqxdul 4/ 4<5: 1

^7` Sxedf lvy Srd| Ylqglfdvng= Vkh Uhfhw Vp dæv{ Rxvæhdn1 Vkh Qdvæ P hufxuj 1 Ghfhp ehu; / 4<591

^8` Vkh vklvthq Qdvæ P hufxuj hglvudæv lq 4<59 uhdvng w vkh vp dæv{ rxvæhdn dsshduhg rq Rfvæhu 55/ 59/ 5<) 63 +5, dqq Qryhp ehu 5/ 7/ 8/ 43/ 45 +5, / 46/ dqq 4: 1

^9` Vkh qxp ehu ri lqihfvrv lv qrw z lvkrxwxqfhuellqv1 P dql shrsd Ô sdufvædæv vkrv z lvk pruh plæg v| p svrp v Ó suredæd qhyhu uhfhlyg phglfdo fdh dqq vrp h vkwgdg p dl kdyh ehq plvldj qrvhg dv vxihulqj iurp rvkhu vxufhv ri ihyhu' Pruhryhu/ vkh p hvkrgv xvng w fræfvngdæv rq vkh rxvæhdn dqq vkh idfvw xvng w hvvp dvñ vkh qxp ehu ri fdhv duh qrw ghvldng lq qhz vsdshu vxufhv1 Iru vkh sxusrhv ri vklv hvdl/ d vqhvh ri vkh hslghp lfæ vfdh lv pruh lp srædqvkw d vshlilf dffxud| 1 Vkh iljxuhv qrvng deryh dsshdu lq Fxuhqw Zruæg Suhvdhqv ri Frpp xqlfdæv Glvhdvhl Sxedf Khdak Uhsruv1 Rfvæhu 59/ 4<5; > 76= 5; 5<5; 661 Dq dvlfd el d æfdo sk|vldæ vkw dsshduhg lq Vrxvk Diulfdæ p hglfdo mxuqdo lq Vhvvp ehu 4<5: vdvng vkw Ôd frqvhu dvlyh hvvp dvñ Ô ri vkh hslghp lf Ôv frqvghng w eh 73/ 333' Ô Hglaj w q DG1 Ô Ghaj xh Ôv Vnhq lq vkh Uhfhw Hslghp lf lq Gxuedq1 Vkh Mxuqdori vkh P hglfdo Dvrfldæv ri Vrxvk Diulfd 4<5: > 4=77907; 1

^` Fxuhqw Zruæg Suhvdhqv ri Frpp xqlfdæv Glvhdvhl Sxedf Khdak Uhsruv1 Rfvæhu 59/ 4<5; > 76= 5; 5<5; 661 ^;` D J uhdw Rssruvqlv1 Vkh Qdvæ P hufxuj 1 Mqh 4/ 4<5: 1

^` Suhvvrq QZ k| vñ 8; 71

^3` K| vrs Mvhdv vks Hp sluh=Dvldq/ Diulfd dqq Eulvkv Vldæw lq vkh P hufkdqwp dulqhf 14; ; 304<781 Mxuqdori Dvldq dqq Diulfd Vxglhv1533<77=7<5: 1 Sdj h 951

^4` Lhxqg E1 lqvghu dqq Rxvlgv=vkh lqldq Zrunlqj Fæw ri Gxuedq/ 4<430 4<<31 Srwvpxvk/ QK= Khlqhp dqq> 4<<81 Sdj h 5<1

^5` P dl æp S1 Vkh Vuxjj dh iru Vsdfh lq Væ hqvthvk' Fhqvul Gxuedq1 Lq= P dl æp S/ hg> Hgz dugv L/ hg1 Vkh Shrsdæv Flv= Diulfd Qih lq Væ hqvthvk0 Fhqvul Gxuedq1 Srwvpxvk/ QK= Khlqhp dqq> 4<<9=40641 Sdj h 61

^6` Vrv G1 Ôfvhdvlyh Ghvxfvr q Ô

Hduj Prghuqlw Sædqlqj lq vkh Vrxvk Gxuedq lqgxvwdl] r qh/ Vrxvk Diulfd1 Mxuqdori Vrxvkuq Diulfd Vxglhv15336> 5<=568058<1 Sdj h 5751P dl æp / 61

^47` Lhxqg/ 661

^48` Lelg1

^49` P dl æp / 6

^4: ` Vkhv srævvrq vdvvfv duh iurp vkh Gxuedq Erurxjk Erxqgdulhv Frpp lwrq/ 4<5: 5; 1 D vxp p dul vædæv lvsurylghg lq= lhxqg/ 661

^4;` D Vrxvk Diulfdæ sxedf khdak p dæv iurp vkh shulg lqvrgxfhg vp dæv{ el vdf lqj lw klwruj lq Vrxvk Diulfd1 Lw vshlilfdæv uhihuhqfhv d z lghvshdg vp dæv{ hslghp lf lq 4; ; 4 dv dq hduj hyhqvkv dævshg vkh dhj do hqylurqp hqv durxqg vp dæv{ rxvæhdn1 Uhlq DZ 1 Vdqlvvrq dqq Sxedf Khdak= Zlvk Vshlfo Uhihuhqfh w Frqglvrqv lq Vrxvk Diulfd1 Fdshwz q= Mvæ) Fr' OVG> 4<5: 1 Sdj h 5; 505; 61

^4<` Vp dæv{ ldfvkhv Zruæg Khdak Ruj dql} dvvrq1 53341 Dydædæv dæv kwæ= 22 z z z z kr 1qv2p hglfd hqvth2 idf w vkhv2vp dæv{ 2hq21 Dffhvhg Dsulo 4; / 53451

^53` Vhh Uhjævvrqv Djdlqv vkh Rffxuhqfh dqq Vkuhdvqh Rvæhdv ri Vp dæv{ Jryhuq hqv Qrvfh 53<7 ri 4<59/ vxp p dul} hg lq Uhlq/ 5; 705; 91

^54` Lelg1

^55` Vkhvæduvfv/ æfdvng lq vkh qrvkuq sdvri vkh Erurxjk/ ehiruh uhdfklqj vkh ulyhu dæqj vkh Xpjhlq Urdg/ z huh pruh vshlilfdæv nqrz q dv Vklvæ Eduvfv dqq Fkhvææ Eduvfv1 Vkh| z huh krph w lqldq ædæv uhw dqq vkhlu idpldhv dqq d pxfk vp dæv qxp ehuri Diulfdæ z runhu1

^56` Vp dæv{ lq Gxuedq= Vhyq Fdvhv Uhsruvng dv Xpjhlq1 Vkh Qdvæ P hufxuj 1 Rfvæhu 48/ 4<591

^57` Lelg1

^58` Lelg1

^59` Gxuedq P hglfdo Vrfllhv1 Vrxvk Diulfdæ P hglfdo Uhfvrq1 P dl 56/ 4<47>: = 49; 049<1 Dæv/ lqvæh} d ru Ghaj xh lhyhu= Gxuedq Sxedf Frqixvhg1 Vkh Qdvæ P hufxuj 1 Mqxdul 5</ 4<5: 1

^5: ` Lqvæh} d ru Ghaj xh lhyhu= Gxuedq Sxedf Frqixvhg1 Vkh Qdvæ P hufxuj 1 Mqxdul 5</ 4<5: 1

^5;` Lelg1 Dæv/ Sklæsv K1 Vkh Ruj lq ri vkh Sxedf Khdak Dfvri 4<4<1 Vrxvk Diulfdæ P hglfdo Mxuqdo 14<<3>: = 86408651

^5<` Lelg1 Vkhv frpp xqlvthv z huh Wqj dæv vkh qrvk, / Dp dqlp w w vkh vrvk, / dqq Vhd Ylhz / æfdvng dæqj vkh vdlq dgh w vkh lqvhu' u' nævwhl r qg vkh Erurxjkæ vrvkz hwh hgj h1 Rq Mqxdul 58/ vkh P hufxuj uhsruvng vz r z hnv ri Ôqvæh} d Ôdvhd Ylhz 1 Vkhlv

7:

fdq eh frqvlghuhg vkh iluwghvf usvwr q
ri vkh 4<5: hslghp lf lq vkh P hufxuj 1
Krz hyhu/ r q Mlqxdul 44/ dq lvhp udq
qr vqaj vkw Hdw Orqgrq riilflda/
ilqglaj 48 fuhz p hp ehuz z lvk ghaj xh/
txdudqvlqhg vkh V1/1 Mj huirqvrlq Ó
z klfk dhiw Gxuedq r q Mlqxdul <vk1
VKhv lqihfvrv z huh dwulexvng w
Prpedvd/ Ô khuh vkh yhw h f dathg
uhf hqvô Krz hyhu/ vkh Nhqd J djhvn
lqglfdvrv vkh vndp hudhiw Nldqgl Kduer u
r q Ghfhp eh u 41 Z klh vl{ z hhnv d qg
vnyhudo vktserdug vadqvp lwrq f l f d v
duh sr vtedv/ lwrhvp v dwdhdv d dnhq Ó
j lyhq vkw ghaj xh v lqv lqv lqf xedv r q
shulrg dyhudj hv 70 gdj v/ vkh vks v
duydo lq Gxuedq r q Mlqxdul 7/ d qg vkh
vkhq xqup dunhg, suhvqh ri ghaj xh
lq vkh w z q Ó vkw vkh lqihfvrv qv
glv fryuhg dw Hdw Orqgrq rffxuhg lq
Gxuedq1 Glvhdv Derdug Vks= lhyhu
Frqvfvng r q Hdw Diulfdq Frdvw Vkh
Qdvob P hufxuj 1 Mlqxdul 44/ 4<5: 1 Davr/
Vklsslaj Uhsruw Nldqgl Kduer xul Vkh
Nhqd J djhvn1 Ghfhp eh u 55/ 4<59> 5; =
48661
^63` Lqioxhqd ru Ghaj xh lhyhuB=
Gxuedq Sxedf Frqixvng1 Vkh Qdvob
P hufxuj 1 Mlqxdul 5</ 4<5: 1
^64` Uhlq/ 63; 1
^65` J xedhu/ Ghaj xh/ 55<1
^66` Lelg1
^67` Kxp skuhj v P 1 Ghaj xh lhyhu=
Euhdner qh lhyhu lq=Nlsh NI / hg1 Sr{/
Saj xh/ d qg Shwldhfh=Glvdhv lq Klwruj 1
Orqgrq=Rurq Sxedvklaj Jurxs>4<<</
sdj h<51
^68` Hglaj w q/ 77: 1
^69` Frqvlghu vkh f d v h p r u a d v y u d v h l q
vkh v z r h{ dp sdv lq vklv hvdj 1 Vkh 48
ghdvkvp dpraj 93 uhsruhg f d v h r i
vp d a s r { l q 4<59 uhsuhvqvhg d Ô l a u d v h x
ri 58(1 Vkh 94 ghdvkvp dwulexvng w vkh
hwlp dvhg 83/333 f d v h r i ghaj xh
| lhaghg d f d v h p r u a d v y u d v h r i 314(1
^6: ` Iru h{ dp sdv/ Dqr vku Ghaj xh
Hslghp lf= Qxp hur xv Fdvh lq vkh
Erurxj k/ Vkh Qdvob P hufxuj 1 l heuxduj
4</ 4<5: 1
^6; ` Uhlq/ 63; 1 Vklv wvnhp hqwf d q r w
krz hyhu/ eh dssdhg w frqvnp srudj
ghaj xh g l q d p l f v d q g v l q f h l p p x q l v
lv vxew/sh vshlilf d q g vkh glvdhv v
irxu vxew/shv ryhuas p x f k p r u h
f r p p r q d 1
^6<` J xedhu/ Ghaj xh/ 5691
^73` J xedhu G1 Ghaj xh2 Ghaj xh
Khp ruokdj lf lhyhu= Klwruj d qg
Fxuhqw Vvavv1 Lq= Qryduw lrxqgdv r q
Vj p s r v x p 5: = Qh z W h d v p h q w V v u d h j l h v
iru Ghaj xh d q g R v k h l a y l y l u b G l v h d v h v 1
F k l f k h v h u / X N = M k q Z l d h) V r q v / O v g >
5339=60491 Sdj h 71
Df hvr

^74` J xedhu/ Ghaj xh/ 57505781
^75` Lelg1 5781
^76` Lelg1
^77` J xedhu/ Ghaj xh/ 5771 Davr/
Ghaj xh2 GK1 = l u h t x h q w j D v n h g
T x h w r q v 1 Z r u g K h d a k R u j d q l } d v r q /
53391 Dyldatedh dw=
k w s = 2 2 z z z 1 h d u r t z k r 1 q v 2 h q 2 v h f v r q
432 v h f v r q 6652 v h f v r q 4359 k v p 1
D f f h v h g D s u o 5 7 / 5 3 4 5 1
^78` Dqr vku Ghaj xh Hslghp lf=
Qxp hur xv Fdvh lq vkh Erurxj k1 Vkh
Qdvob P hufxuj 1 l he 4</ 4<5: 1
^79` Lelg1
^7: ` Qdvob Udlqidæ= U h v x u v i r u P d u f k 1
Vkh Qdvob P hufxuj 1 Dsulo 47/ 4<5: 1 Iru
vnp shudvuhw hiihf w r q h{ w l q v f
l q f x e d v r q s h u l r g v / v h J x e d u / G h a j x h /
5761
^7; ` J xedhu/ Ghaj xh/ 5761
^7<` Dqr vku Ghaj xh Hslghp lf1 Vkh
Qdvob P hufxuj 1 l heuxduj 4</ 4<5: 1 Davr/
Vkh Ghaj xh lhyhu R x v e u h d n / V k h Q d v o b
P h u f x u j 1 l h e u x d u j 5 9 / 4 < 5 : 1
^83` Lelg1
^84` Vkh iluw dg/ iru vkh lqvfvf lgh
NRP R/ udq lq Vkh Qdvob P hufxuj r q
l heuxduj 541 Vklv z d v i r a z z h g v k r u w j
e l v z r d g v v k d w w g d j z r x g e h f d a t h g
Ô g y h u w u d a x i r u v k h l q v h f w f l g h
E D O D O D / r q l h e u x d u j 5 6 d q g 5 7 1 R q
P d u f k 4 / d q d g i r u v k h E h d f k K r v n o
X p j d e d e d d s s h d u h g 1
^85` Gdaj hu r i Ghaj xh lhyhu Vkh Qdvob
P hufxuj 1 P dufk 44/ 4<5: 1 Vkh hwlp d v h
ri 8333 f d v h d a r d s s h d u h g r q P d u f k 4 4 /
l q v k h P h u f x u j v v l w h u s d s h u / v k h Q d v o b
D g y h u h w h u r V k h i l j x u h z d v u s u l q v h g l q
v k h P h u f x u j v d n d g h g l w u d o r q P d u f k
4 5 1
^86` Vvlp s Lw R x v l Vkh Qdvob P hufxuj 1
P dufk 45/ 4<5: 1
^87` Lelg1
^88` Z du dw Odv l Vkh Qdvob P hufxuj 1
P dufk 5</ 4<5: 1
^89` Nrpr Dg1 Vkh Qdvob P hufxuj 1
P dufk 59/ 4<5: 1
^8: ` Ghaj xh Sr v l v r q 1 V k h Q d v o b
P h u f x u j 1 P d j 7 / 4 < 5 : 1
^8; ` D J u h d w R s s r u x q l v y 1 V k h Q d v o b
P h u f x u j 1 M l q h 4 / 4 < 5 : 1
^8<` Vkh w v o s r s x a d v r q r i v k h e r u r x j k
l v d w h g d w 4 5 5 / < 9 l q d v a d e d
v x p p d u l } l a j g d v l i u r p v k h 4 < 5 : 0 5 ; /
G x u e d q E r u r x j k E r x a g d u h v
F r p p l w r q l q l u h x q g / 6 6 1
^93` Hglaj w q/ 7791 Davr/ Fxuhqw Z r u g
Suhyddhfh ri Frp p xqlf dedh Glvhdv h v 1
Sxedf Khdak Uhsruw1 Rf w eh u 59/ 4<5; >
76=5; 5<05; 661
^94` Sxqvlp v Klæ= Ghaj xh Hslghp lf1
Vkh Qdvob P hufxuj 1 P dufk 4/ 4<5: 1
^95` Ghaj xh Hslghp lf=Dufkg h d f r q d q g

vkh ÔChvr q1 Vkh Qdvob P hufxuj 1 Dsulo
:/ 4<5: 1
^96` Rxu Ghaj xh= D Gxuedq Krp h
Wf g d j 1 V k h Q d v o b P h u f x u j 1 P d u f k 5 < /
4<5: 1
^97` Dq Lqglj qdqw Krxvkr qghu1 Vkh
Qdvob P hufxuj 1 P dufk 4</ 4<5: 1
^98` Ghaj xh Sr v l v r q 1 V k h Q d v o b P h u f x u j 1
P d j 7 / 4 < 5 : 1
^99` Ghaj xh=Krz l w K d s s h q v 1 V k h Q d v o b
P h u f x u j 1 D s u o 5 5 / 4 < 5 : 1
^9: ` Hglaj w q/ 77: 1
^9; ` Gxuedq) Ghaj xh lhyhu Vkh Qdvob
P h u f x u j 1 P d u f k 4 : / 4 < 5 : 1 D a v r / G h a j x h
H s l g h p l f = D u f k g h d f r q d a g v k h
Ô C h v r q 1 V k h Q d v o b P h u f x u j 1 D s u o : /
4<5: 1
^9<` Fxuhqw Z r u g S u h y d d h f h r i
F r p p x q l f d e d G l v h d v h v 1 S x e d f K h d a k
U h s r u w 1 R f w e h u 5 9 / 4 < 5 ; > 7 6 = 5 ; 5 < 0 5 ; 6 6 1
^: 3` Lqvuhv lqj d / d v h u r O x u y h j
s x e d v k h g l q 4 < 8 : v n h v k h g z k d v
d u k u r s r g o e r u q h y l u x v h v k d g r f f x u h g
l q z k l f k s a d f h l q V r x v k D i u l f d r y h u v k h
a d w 6 3 0 8 3 | h d u 1 G h a j x h z d v d p r a j
v k h y l u x v h v v k h v h u h d u f k h u z h u h
l q v h u h v h g l q 1 V k h w a g j s u r w f r o
v l s x a d v h g v k d w s d u f l s d q w f r x g q r w
k d y h w d y h d g p r u h v k d q 6 3 p l d v i u r p
v k h l u e l u k s a d f h g x u l a j v k h l u d i h w p h 1
Z k l d h v k u d f h r i v k h s d u f l s d q w z d v
q r w s u r y l g h g / v k h d u f d q r v h g v k d w v k h
p r e l d v y r i V r x v k D i u l f d q d i h p h d q w
v k d w p r w s d u f l s d q w z h u h D i u l f d q
z r p h q 1 l q G x u e d q v k h u h v d u f k h u
i r x q g 6 3 (r i d g x o w l q d v p d a o v d p s d h
+ 2 6 3 , k d g d q v e r g l h v w g h a j x h 1
N r n h u r w J K / V p l v k e x u q N F / Z h l q e u h q
P S 1 Q h x w a d d v l a j d q v e r g l h v w
d u k u r s r g o e r u q h y l u x v h v l q k x p d q d a g
d a l p d a l q v k h X a l r q r i V r x v k D i u l f d 1
M l x u d o r i l p p x q r a j | 1 4 < 8 9 > : = 6 4 6 0 6 5 5 1
^: 4` J xedhu/ Ghaj xh/ 5581
^: 5` Dffruglaj w 4<54 fhqvxv gdvd/
<6: 9: ri vkh 474/669 Lqgl d qv dylaj lq
Qdvob z huh eruq lq V r x v k D i u l f d
+ 9 9 1 6 (, 1 V r x v k D i u l f d q L a g l d q F r a j u h w
V a l v n p h a q w V x e p l w h g w v k h
J r y h u a p h a w r i L a g l d G h d j d v r q 1 L a g l d q
R s l q l r q / M l q x d u l : / 4 < 5 : > 5 = 4 1
^: 6` Uhy l h z r i L a j d a d h Q d v o b i u r p
M l q x d u l 4 w M l q h 6 3 / 4 < 5 : / | l h a g h g v z r
s x e d f q r w f h v d e r x w v k h h s l g h p l f
s a d f h g e l v k h G x u e d q W f z q F d u n 1
L a g l d q R s l q l r q p h a w r q h g v k h g h a j x h
v l v x d v r q v k u h v l p h v g x u l a j v k h v d p h
s h u l r g e l l a f o x l a j v k r w t x r v a l r q v
d i v h g i u r p G x u e d q w g d l d s d s h u l q v k h
Ô Q r v h v d a g Q h z v Ô v h f v r q 1
^: 7` Lqioxhqd ru Ghaj xh lhyhu Vkh
Qdvob P hufxuj 1 Mlqxdul 5</ 4<5: 1
Wf qj dæ= J h q h u d o l v n p v 1 V k h Q d v o b
P h u f x u j 1 l h e 4 3 / 4 < 5 : 1 G h a j x h l h y h u
7;

Rxveuhdn=I uhvk Fdvhv r q vkh Ehud1Vkh Qdvalo P hufxuj 1P duf k 56/ 4<5: 1
^ 8' NRP R Dg1 Vkh Qdvalo P hufxuj 1 I heuxduj 54/ 4<5: 1
^ 9' Vwlp s Lw Rxv1 Vkh Qdvalo P hufxuj 1 P duf k 45/ 4<5: 1
^ :` Lelg1
^ ;` Lqqrfrhgf h Ò ru Z kdvl Vkh Qdvalo P hufxuj 1P duf k 4: / 4<5: 1
^ < Vkh Frpp hufldo \ hduf Vkh Qdvalo P hufxuj 1Dsulo5</ 4<5<1
^ 3' Lv Gxuedq Glvhdv SurriB=Exvqhvw P hq Vdfndh Frxqf l0f Vkh Qdvalo P hufxuj 1 P dl 56/ 4<5: 1
^ 4' Lelg1
^ 5' Vklvt xr vñ lv vñh q iurp vkh 4<5905: Òp dl ruw Plqxvñ Ò d qg d q q x d o v w ò p h q w h { f h u s v ò l q v k l v d u l f d h = V k h P h u r s r d v r i L q g x v u l l q V D 1 1 V k h Q d v a l o P h u f x u j 1 M d 5 ; / 4 < 5 : 1
^ 6' Lelg1
^ 7' D Frqyhu1 Vkh Qdvalo P hufxuj 1 P duf k 63/ 4<5: 1
^ 8' K h u h / d f x u r x v l u r q l l v z r u k q r v l a j 1 G h v s l v h v k h n q r z d g j h v k d w d q d w a l f n r i g h a j x h f r q i h w l p p x q l v / v k h d n h d k r r g r i u h f x u h q w h s l g h p l f v l v u h s h d v h g d l q y r n h g 1 F r x q v u d j x p h q w z h u h q r w p d g h v k d w r q h d g y d q v e j h r i d q h s l g h p l f r i v k l v v l } h l v v k d w l w z r x a g v h u y h v k h v d p h i x q f w r q d v d p d v y d f f l a d w r q s u r j u d p 1 V j q l i l f d q v e j u n g x f l a j v k h q x p e h u r i v x v f h s v e d h k x p d q k r w w z r x a g d p l w f k d q f h v / r u v h y h u r x v e u h d n v l q v k h q h d u i x v u h 1
^ 9' W h d p Z r u n Z d q v h g 1 V k h Q d v a l o P h u f x u j 1 D s u l o 4 / 4 < 5 :
^ :` J r r g E x v q h w 1 V k h Q d v a l o P h u f x u j 1 P d l 5 7 / 4 < 5 : 1
^ ;` V k l v t x r v ñ l v d q d v h u r q p d g h l q d P h u f x u j h g l v u d o = D F r q y h u 1 V k h Q d v a l o P h u f x u j 1 P d u f k 6 3 / 4 < 5 : 1
^ < D J u h d w R s s r u x q l v 1 V k h Q d v a l o P h u f x u j 1 M q h 4 / 4 < 5 : 1

Eledrj udk| =

Dufklyh Frqvxohg
Dp hufdq Erdug ri Frpp lwrqhw ri Iruhjq P lwrq/ Uhf rugv iru vkh] xox P lwrq Vshf ldo Fradhv r qv/ Krxj kv r q Cleudj / Fdp eulj h / P D 1

Qhz vsdshw Xvhg
Vkh Qdvalo P hufxuj / Rfwehu 4<59 Ò
Dxj xww4<5: +P l fur ilop ,
Lodj d avh Qdval0 Rfwehu 4<59 Ò M d 4<5: +G l j l w } h g i u r p P l f u r i l o p ,
Lqgl d q Rslqlr q / Rfwehu 4<59 Ò M d 4<5: +G l j l w } h g i u r p P l f u r i l o p ,

Df hvr

Hglaj w q / D h { G 1 Ò G h a j x h x d v V h q l q v k h U h f h q w H s l g h p l f l q G x u e d q Ò V k h M x u q d o r i v k h P h g l f d o D w r f l d w r q r i V r x v k D i u f d 6 6 + 4 < 5 : , / 7 7 9 0 7 7 ; 1

I uhxqg/ Elaf lqvghw d qg R x w l g h w = v k h l q g l d q Z r u n l a j F a d w r i G x u e d q / 4 < 4 3 0 4 < < 3 1 S r u w p r x v k / Q K = K h l q h p d a q / 4 < < 8 1

I | i h / K d p l a r q K 1 l q V r x v k D i u f d W g d l / z l v k d q D f f r x q w r i P r g h u q U k r g h d l O r q g r q = H y h d l j k Q d v k / 4 < 4 4 1

J x e d u / G x d q h 1 Ò G h a j x h 2 G h a j x h K h p r u k d j l f l h y h u = K l w r u j d a g F x u h q w V a l v x v Ò Q r y d u w l r x q g d w r q V j p s r v l p 5 : = Q h z W h d v p h q w V w d v h j l h v i r u G h a j x h d a g R v k h u l a y l y l u d o G l v h d v h + F k l f k h w h u / X N = M k q Z l d l) V r q v / O u g / 5 3 3 9 , / 6 0 4 9 1

bbbb1 Ò G h a j x h d a g G h a j x h K h p r u k d j l f l h y h u Ò F d q l f d o P l f u r e l r a j | U h y l h z v / 4 4 2 6 + 4 < < , / 7 ; 3 0 7 < 9 1

bbbb1 Ò G h a j x h Ò l q V k h D u e r y l u x v h = H s l g h p l r a j | d a g H f r a j | / Y r o l l / h g l v h g e l V k r p d v S 1 P r q d v k + E r f d U d w r q / l O = F U F S u h w / 4 < , / 5 5 6 0 5 9 3 1

K x p s k u h | v / P d j d u h w Ò G h a j x h l h y h u = E u h d n e r q h l h y h u Ò l q S r { / S a j x h w / d a g S h w l d q f h = G l v h d v l q K l w r u j / H g l v h g e l N h q q h v k l 1 N l s d h 1 O r q g r q = R u l r q S x e d v k l a j J u r x s / 4 < < < 1

K | v a s / M q d v k d a / Ò W h d p v k l s H p s l u h = D v l d q / D i u f d q d a g E u l v v k V a l a w l q v k h P h u f k d q w P d u l q h f 1 4 ; ; 3 0 4 < 7 8 Ò M x u q d o r i D v l d q d a g D i u f d q V a x g l h w / 7 7 2 4 + 5 3 3 < , / 7 < 0 9 : 1

N r n h u r w U K / N F V p l v k e x u q / d a g P S Z h l q e u h q 1 Ò Q h x w a d d v l a j d q v e r g l h v w d u k u r s r g 0 e r u q h y l u x v h v l q k x p d q d a g d a l p d a l q v k h X q l r q r i V r x v k D i u f d Ò M x u q d o r i l p p x q r a j | / 8 ; + 4 < 8 9 , 6 4 6 0 6 5 5 1

P d l a e p / S d x d Ò V k h V u x j j d i r u V s d f h l q V e h q w h v k O F h q w u j G x u e d q Ò l q V k h S h r s d w F l v = D i u f d O i h l q V e h q w h v k 0 F h q w u j G x u e d q / h g l v h g e l S d x o P d l a e p d a g l d l q H g z d u g v + S r u w p r x v k / Q K = K h l q h p d a q / 4 < < 9 , / 4 0 6 4 1

S u h w r q 0 k | v w / U r e h u 1 Ò F r q w u x f v h g C h l v x u h V s d f h = V k h V h d v g h d w G x u e d q Ò D a q d a r i W x u l v p U h h d u f k / 5 ; 2 6 + 5 3 3 4 , / 8 ; 4 0 8 < 9 1

U h l g / D 1 Z 1 V d a l v a m r q d a g S x e d f K h d a k = Z l v k V s h f l d o U h i h u h q f h w F r a g l w r q v l q

V r x v k D i u f d 1 F d s h w z q = M v a l) F r 1 O A G / 4 < 5 : 1

V r w w G l d q q h / Ò Ò u h d w y h G h w u x f w r q = H d u j P r g h u l v w S a d q q l a j l q v k V r x v k G x u e d q L a g x w u l d o r q h / V r x v k D i u f d Ò M x u q d o r i V r x v k h u q D i u f d q V a x g l h w / 5 < 2 4 + P d u f k 5 3 3 6 , / 5 6 8 0 5 8 < 1

Ò k l s s l a j U h s r u w = N l d a g l K d u e r x u Ò V k h N h a l d J d j h w w / 5 ; 2 4 4 4 7 + G h f h p e h u 5 5 / 4 < 5 9 , / 4 8 6 6 1

X q d w u l e x v h g / + U h s r u w r i , Ò G x u e d q P h g l f d o V r f l h v Ò V r x v k D i u f d q P h g l f d o U h f r u g / : 2 4 3 + P d l 5 6 / 4 < 4 7 , / 4 9 ; 0 4 9 < 1

Z r u a g K h d a k R u j d a l } d w r q / Ò G h a j x h 2 G K l = l u h t x h q w e j D v n h g T x h w l r q v Ò J h q h y d = Z r u a g K h d a k R u j d a l } d w r q / 5 3 3 9 1 D f f h w h g r q D s u l o 5 7 / 5 3 4 5 1 k w s = 2 2 z z z 1 h d u r t z k r 1 q v e h q 2 v h f w r q 4 3 2 v h f w r q 6 6 5 2 v h f w r q 4 3 5 9 1 k v p

Z r u a g K h d a k R u j d a l } d w r q / Ò p d a s s r { l d f w k h h w Ò J h q h y d = Z r u a g K h d a k R u j d a l } d w r q / 5 3 3 4 1 D f f h w h g r q D s u l o 4 ; / 5 3 4 5 1 k w s = 2 2 z z z t z k r 1 q v e p h g l d f h q w h 2 i d f w v k h h w 2 v p d a s s r { 2 h q 2

Gu1 J duadqg dqg Sq p r x vk K r v s l v d o

Ddvr q Eduqhw
Vr x vk Hqg Klvw uldq

Ddvr q Eduqhwkv dyhg lq Erwrq Vr x vk Hqg vlfh 4<97/ p r wri vkwvwp hrq Hdwwsulqj ilhag Vvhwv Vkh
lv d j udgxvri Erwrq Xqlyhuwv dqg j lyhv wxw ri vkh Vr x vk Hqg dqg EXP F duhd1 Vkh lv vkh dxvkru ri
H{ vdydj dq} d Nlqj / Ur ehuv Eduqhw dqg Er wr q P xvlf do Vkh hvhu dqg Vr x vk Hqg Fk duuf vhu=Vs hdlqj
R x w r q Qh j k e r u k r g Fk d q j h 1

Z khq Gu1 Fruqhdv
Q1J duadqg duulyhg
lq Erwrq lq 4<36/
kdylqj sdwhg vkh
P dwdf kxvhw vdwv
er dugv z lvk
kljk krqrw/ kh
xqgrxevhg
h{shfvhg w ilqg
surihwlrqdo
r s s r u x q l w h v 1
Kh kdg j udgxvri
iurp Chrqdug P
hglfdo Vfkrrro dw
Vkdz Xqlyhuwv lq
Uddhjk/ Qruvk
Fdurdaq lq 4;</
r q h r i v h y h u d o
Vr x v k h u q e a d f n
p h g l f d o v f k r r o
v k d w l q v l a d h g
l q v k h l u v x g h q w
d w u r q j v h q v h
r i p l w l r q / d a g
k h k d g n a w u h v u q h g
i u r p g r l a j s r w j
u d g x d v n z r u n
l q r s h u d v y h v x u j
h u j d w O r q g r q
X q l y h u w v / v s h f
l d d } l a j l q v k h
g l v h d v h r i z r p
h q d a g f k l a g u h q 1

Erwrq z dv d vp d d e a d f n
s r s x a d v r q D f h v r

dqg d juhdu ghdo ri suhnglfh1
Erwrq Flv Krvslvdo z klfk kdg
surxgd rshqhg lq 4;97/ glgq
dgp lweadfn grfww ru qxuvh iru
w d l q l a j 1 Z k h v k h u v k h
k r v s l v d o w h d v h g
e a d f n s d w h q w l v x q f
d h d u l

Gu1 J duadqg z dv er u q l q
D a e d p d d a g O z r u n h g
k l v z d j x s i u r p k x p
e d h e h j l a q l a j v O d f f r
u g l a j w j u h d v j u d a g v r q
G d q U h s s h u w r i Q r u v k
F d u r d a d 1 D v d l r x a j
p d a d w V k d z X q l y h u w v /
J d u a d a g z d v d v n l a d h g
d v k d v n / s a d l l a j r q v k h
i l u w e a d f n i r r v e d a o
v n d p > l q k l v v h q l r u
j h d u k h z d v s u h v i g h q w
r i V k d z * D v k d w f D w r
f l d v r q 1

Gxulqj klv iluw | hdu lq
Erwrq/ Gu1 J duadqg dyhg dqg
sulfvfhg p hglflqh lq vkh p lggd0

f a d w e a d f n f r p p x q l w v
k d w r q f h h l w n g r q
G d u w p r x v k d a g E x f n l a j
k d p w u h h w q h d u v k h
E d f n E d j u d l a u r d g
w a d v r q 1 l q 4 < 3 ; / k h
e r x j k w d v p d a e u r z
k r x v h d w 4 5 H d w V s u l a j
i l h a g V u h h w l q v k h
V r x v k H q g d a g r s h q h g
S q p r x v k K r v s l v d o d a g
Q x u h v x W a d l q l a j V f k r r o l
Z k l v k h q d p h S q p r x v k
l v x a n q r z q 1 D w k h v l p
h / v k h u h z h u h i h z h u
v k d a v z h a q v e a d f n
k r v s l v d o / q r w f r x q v l a j
g u x j w u h v l q v k h h a v u h
f r x q v l 1

Hdwwsulqj ilhag Vvhwv lv d
vnh0dqhg eafn ehvz h h q
Z dvklaj w r q Vvhwv dqg
K duulv r q Dyhaxh z khuh
lwp hhw Erwrq Flv Krvslvdo
S q p r x v k K r v s l v d o z d v
f a v h u w Z d v k l a j w r q
V u h h v l l q v k h h d u d
4 < 3 3 v / v k h p d m u l v r i
s u r s h u w r z q h u w r q
H d w w V s u l a j i l h a g V u h h w

z huh Lwlvk/ z lvk vrph Hdvwuq
Hxurshdq Mz v/ d qg vkh Vrxvk Hqg
dv d z krch z dv d pl{ ri Lwlvk/
Fdqgdldq/ Vj uldq/ Chedqhv/ J uhn/
J hup dq d qg Hdvwuq Hxurshdq
Mz lvk l p p l j udq w
Ó d ælj h σ gj l qj
krxvh glwulfw z lvk
p dqj fkdulwlvh d qg
vhwthp hq w krxvhw1
Eæfnv/ z kr kdg
p ryhg iurp Ehdf r q
Klæ l q vkh 4; <3/
vhwthg l q vkh xssu
Vrxvk Hqg d qg
Orz hu Ur{exu 1
Z klch rvkhu vp dæ
krvslvæ vkwdehjd q

D |rxqj Gu1 J duædq1

l q vkh Vrxvk Hqg Ó Fklæghq
Krvslvæ Qhz Hqj ædq Ghdfr qhw/
d qg vkh l uhh Krvslvæ iurp Z r p h q Ó
p d l k dyh ehqhlwlvh iurp vkh lu
sur{lp l v w Ó Flv/ Ó Sd p r xvk
Krvslvæ frxæ q r w l J duædq p d l
k dyh fkrvh q vkh σ f d v r q ehfdxv
vkh H/ d q h d y d v h g w æ l q v k d w w æ l u h g
uxqq l q j grz q Z dvklqj w q Vvhwlvq
4<34/ p d g h i r u h d v l d f f h v 1

Ó vkh krvslvæ z dv
hwæd vkh g w p h h v k h l q f u h d v l q j
ghp d qg i r u k r v s l v æ
d f f r p p r g d v r q v / z k h u h f r æ u h g
sk| v f l d q v p l j k w g l d j q r v h d q g v u h d v
vkh lu rz q f d v h v / Ó z u r v h Z 1 Q 1
Kduwkr u q / d g r z q w z q s x e d v k h u
z k r k r w h g d 4<3; f r q i h u h q f h r q
vkh surj u h w r i vkh Ó p h u l f d q
Qh j u r Ó d q g s x w r x w d k h i v j e r r n
i x æ r i e l r j u d s k l f d o l q i r u p d v r q Ó
Vkh k r v s l v æ l v f k d u l w h g e l v k h
w æ l v h d q g l v r s h q w d æ z k r d u h l q
q h h g r i p h g l f d o r u v x j l f d o f d u h /
u h j d u g d h w r i u d f h / f r æ u / r u
u h d j l r q Ó K h q r v h g v k d w d æ k r x j k
k r p h y l v w k d g e h q p d g h w Ó d
q x p e h u r i z k l v h s d v h q w Ó l q
S d p r x v k K r v s l v æ i l u w | h d u /
Ó q h d u d d æ v k h z r u n z d v d p r q j v k h
f r æ u h g s h r s d h Ó 4

l q d 4<47 u h s r u w / G u 1
J d u æ d q g g h v f u l e h g S d p r x v k
D f h v r

Krvslvæ d qg Qxwv h x W æ l d l q l q j
V f k r r o d v Ó d s u y d v h l q w l v x v r q
v x s s r u w h g v r d h q e l v k h y r æ q v æ l u j
f r q w l e x v r q v d q g u h f h s w i u r p
v k r v h s d v h q w z k r d u h d e d h w s d l
v r p h v k l q j Ó l u r p 4<3<
w 4<47/ 468 p d d h d q g
78: i h p d d h s d v h q w
z h u h d g p l w h g 1 D v k h
z d v d v x j h r q / v x j l f d o
s d v h q w z h u h v k h
p d m u l v / d q g v k h u h
z h u h p d q l d s s h q g h f 0
w p l h v / k | w h u h f w p l h v /
d q g w r q v l æ h f w p l h v 1 9 3 3
s h r s d h / l q f æ g l q j
f k l æ g u h q / z h u h v h h q l q
v k h i u h h r x v s d v h q w

ghsduwp hq w d qg 533 f d u h g i r u e l
q x u h v g r l q j Ó u h h G l w u l f w Z r u n Ó
r u k r p h y l v w Ó q w v k h k r p h v r i
v k h s r r u d q g q h h g | Ó 5

Ó vkh i u h h g l w u l f w z r u n l v
z l v k v k r v h z k r d u h q r w l q s r v l v r q
w s d l i r u q x u h f d u h / Ó z u r v h
K d u w k r u q 1 Ó u h t x h q v l v k h q x u h
f d u l h v e h g d q h q d q g r v k h u p d v h u d o
z k h u h v k h q h h g l v l p s h u d w y h 1 V k h
p h g l f l q h v d u h i x u l v k h g i u h h w
v k h v h g l w u l f w s d v h q w / d q g v k h u h d u h
p d q l h y l g h q f h v r i j u d v h i x o

4<4304<44 f æ d v r i v k h Q x w v h * W æ l d l q l q j V f k r r o l

d s s u h f l d v r q Ó

V æ h q v j O z r | r x q j z r p h q
e h v z h h q v k h d j h v r i 4< d q g 68
u h j l v h u h g d w v k h Q x w v h x W æ l d l q l q j
V f k r r o v k h i l u w | h d u l Ó v k h v f k r r o
z d v r s h q w d æ z k r s r w h v

j u d p p d u v f k r r o h g x f d v r q d q g
s k | v l f d o f d s d f l v j w x q g h j r v k h
w u h q x r x v d i h z k l f k q h f h w d u l d
d f f r p s d q l h v v k h s u r i h w l r q r i
q x u h / Ó z u r v h K d u w k r u q 1

V k h f r p p x q l v j v x s s r u w h g
v k h k r v s l v æ d z l v k σ f d o u h v l g h q w /
f k x u f k h v / d q g v h w æ h p h q w k r x v h v
g r q d v l q j e æ l q n h w / e r w æ h v / u x j v / v h d
n h w æ h v / v d x f h s d q v / q l j k v j r z q v /
e r r n v / p d j d | l q h v d q g / l q v k r v h g d l v
r i i æ z h u p l w l r q v / f x w i æ z h w 1
F k x u f k h v p d g h u h i h u d æ 1

R q h r i v k h n h l v w v k h
v x f f h w r i e æ f n g r f w u w d w v k h v l p h
z d v l q y r o y h p h q w l q s u r i h w l r q d o
d v r f l d v r q v / v x f k d v v k h E d l V æ l v h
P h g l f d o D w r f l d v r q / i r x q g h g e l
e æ f n g r f w u w / g h q w w w d q g
s k d u p d f l w w l q 4<631 E æ f n g r f w u w
z h u h d e d h w p d n h l q u r d g v l q w v k h
P d v d f k x v h w w P h g l f d o D w r f l d v r q /
i r x q g h g l q 4; ; 4> G u 1 J d u æ d q g
e h f d p h y l f h s u h v l g h q w l Z k h q v k h
Q d v r q d o P h g l f d o D w r f l d v r q /
z k l f k u h s u h v h q v h g D i u l f d q 0
D p h u l f d q s k | v l f l d q v d q g s d v h q w /
k h g l w d q x d o p h h w l q j l q E r w w q l q
4<3< / p h p e h w k l s l q f æ g h g 683
e æ f n s k | v l f l d q v / v x j h r q v / d q g
s k d u p d f l w w 1

l u r p v k h l q f h s w r q r i
S d p r x v k K r v s l v æ d E r w w q e æ f n
f l y l o u j k w d h d g h u Z l æ d p P r q u r h
W l r w h u z d v r s s r v h g w d u d f l d æ j
v h j u h d v h g k r v s l v æ d d q g z u r v h
d j d l q w l w l q V k h J x d u g l d q

ghz vsdshul Z khq/ dqp rww vz hqv
| hduw advnu/ Gu1 J duadqg sadqghg w
h{sdqg Sq prxvk Krsvlalo w
Ur{exul/ Wlr wnu/ klv vlvnu P dxgh
Wnz dug/ dqq surplqhqw eadfn
grfwu Z laadp Z ruwk| dqq Z doinu
R1Wd| arerhfvng>vkh| z huh lqvhwq

rqlvni udvqj Erwvq
Flv Krsvlald1^6`

Wkrvh pxw
kdyh ehq wuhwix
vlp hv1 Gu1 Z ruwk|
dqq Wd| arukd ehq

rqlvni Sq prxvk Krsvlaldov p hglfdo
wadi iru | hduw1Wd| aru/ dv d vaxghq
kdg urphg zlvk vkh J duadqg
idp lq1 Ervk z huh j udgxvnu ri vkh
Frathj h ri Sk| vflidqv dqq Vxj hrqv
rqlvkdz pxw Dyhgxh/ nww durxqg
vkh fruhul J duadqg x sadq z dv
qhyhuudd}hg1

Gu1 Z ruwk| x gdxj kvnu
P | uwh z dv txrvng lq Eadfn Erwvqld
^4<: 9= O vhfraq Qudv/ vj uhj dvng
krsvlaldov dv qrwz kdwp | idvkhuru
P u1 Wlr wnu z dqvng ^1ff d krsvlaldov
iru vkh fruhg O W dxvkru Odqfh
Fdughq/ vkh dgghg/ O dqq lwz rxag
phdq hyhqvadq vkwvkh fruhg
z rxag eh vxw rxw ri vkh Flv
Krvslaldov dqq vkh fdqlfv dqq vhw
vkhuh O

Ur{exul flylf dhdghu
Phaqhd Fdw h{suhwhg dqr vkhu
ylhz z khq vkh z dv txrvng lq Eadfn
Erwvqld1 O J duadqg` z dqvng d sadf h
z khuh fruhg shrsch frxag jr dqq
iuhd wdlq ^1ff Z h qhghg vkw
krsvlaldov li z h kdq sxwrxu irufhv
ehklqg lw z klv dqq eadfn z rxag
kdyh jr qh vkhuh ^1ff D prqxp hqww
eadfn shrsch x lqj hqxlv O ^7

Divnu dq h{fkdaq h ri sr dvn
dvwnu zlvk vkh vxshulqvhqghqw ri
Flv Krsvlaldov lq z klfk Wlr wnu
jurxs wuhwhg vkh dnj do ujkw ri
vz r eadfn z rphq z kr kdq dssdhg
w lw Wdlqlqj Vkrroiru Qxuvh O
z klfk z dv/ divnu daad sxedf
lqvwxvtrq O vkh z rphq z huh
Df hvr

dgp lwhg lq 4<5<1 lq 4<64 Gu1 Mka
KdoolL ehf dp h vkh iluweadfn lqvnuq
w wdlq vkhuh/ exwlwz dv qrwqxvno
4<7< vkwvkh iluweadfn sk| vflidq/
Gu1 Fkdudv Erqqu/ z dv dssrlqvng
w vkh wadi1

Sq prxvk Krsvlaldov fsvng
lq 4<5; 1 Gu1 J duadqg
z dv kdugd rxw ri
exvlqhw/ krz hyul
lru | hduw/ kh kdq
ehq lq sulydvn
sulfvfh dw558 Z hww

Fdqwq Wuhhw lq vkh Vrxvk Hqg/
z klfk z dv dor klv krp h1 lq vkh
4<63v/ kh/ klv z lih P dj jlh/ dqq
gdxj kvnu Vkhq d pryhg w 4:6
P dvrq Wuhdfh lq Eurndqh/ z klh
klv riilfh uhp dlqhg rqlvhw Fdqwq
Wuhhw Vkh| dor kdq d frpirwledh
vxpphu frwaj h lq Rdn Exiiv rqlv
P duxdx Ylqh| dug/ z khuh vkh
idp lq z dv sdw ri vkh Ylqh| dug
vrfldo vfhqh1 Gu1 J duadqg z dv vkh
iluweadfn p dq w mlq vkh HdwwFkrs
Ehdfk Foxe/ dqq klv gdxj kvnu
Vkhq d z dv rqh ri vkh irxaghu ri
vkh Frwaj hu/ d
jurxs ri eadfn
z rphq vkwdfvlyh
lq fkdulwledh
dfvylwv rqlv
lvadqg1 Vkh idp lq
vshqw hyul
vxpphu dw Rdn
Exiiv iurp 4<54
w 4<85/ vkh | hdu
Gu1 J duadqg glhg/
vhadqj vkh frwaj h
rqlv zlvklq vkh
adwvz rghfdghv1

lq 4<7</
Herq| pdj d}lqh

udq d skr w ri Gu1 J duadqg dqq klv
j udqggdxj kvnu Mdq fdsvtrqh/ O Gu1
J duadqg/ Erwvq xw ufkhwvsk| vflidq/
lv yhvudq dw Rdn Exiiv vxpphu
frsq| O lvglgq xwvd| ufkhweadfn
sk| vflidq/ lwwdlg ufkhwvsk| vflidq1
Vkh fdsvtrq dor vdlg/ O Qrz dw

Udgdiih Frathj h/ Mdq kdq euadqg
ghexwadw| hdu O ^8`

Mdq/ dnh khu| rxqj hu vlvnu
Mfhq dqq vkhlu prvkhu Vkhq d/
z hqww Udgdiih Frathj h1 Z khq vkh
p duvhg d Kdudug surihwv u O w
z dv vkh eljj hww vrfldo lqvnuadfn
hyhqw dw vkh vlp hv O vdlv d ardo
z rpdq z krnqh z khu z hoo dqq
ylvng Rdn Exiiv dqq P dvrq
Wuhdfh1 Vkh uhp hp ehv vkh gdl Gu1
J duadqg erxj kwd qhz Sdfndug dqq
glvfryuhg lw z rxag xw ilw lq vkh
judj h1 Mdq dqq khu kxvedqg
pryhg w Rklr/ z klh Mfhq d
p duvhg d grfwu dqq pryhg rxw
z hwd

Vkhq d vkrxj kwri khuh
dv d O adsshu O dffruglqj w khu
j udqgv r Gdq1 Vkh kreer eehg zlvk
ydlrxv qvledh ri eadfn vrfhwv/
lqfoxglqj \ radqgd Gxerlv/
gdxj kvnu ri Z HE1 Gxerlv O
Vkhq d z dv lq khu z hggqlqj sdw
O dqq ludqn Kruqh/ d Kdudh
uhqdlwdqfh z ulvnu dqq xqfch ri
Oqd Kruqh1 Kruqh ghglfdvng d

Wderudq Z dug/ Sq prxvk Krsvlaldov ixuqlvkhg el vkh Vz hgh
Nqlj kw dqq Gdxj kvnu ri Wderu1

srhp w Vkhq d/ xvlqj khu
qlfnqdp h Wdh/ dqq lw z dv
sxedvkhg lq Vkh Fulv p dj d}lqh1
O Wkdwz dv p | j udqg prvkhu/ d ixq
shur q/ O vdlv Gdq1 ^9`

D Eadfn Kहुवज h Vlv
sadt xh z dv sxw rqlvkh Hdww

Vsulqj ilhag Vvhhw exlqglqj gxulqj Dp hulfdx Elfhqvlnqldola 4< 9/ exw lv hdv| w p lw iru dævkhl y| 1Qrz dsdwp hqw/ vkh vp dæ qduur z kr xv h lv uhædvlyhq xqfkdqj hg iur p Gul J duædqg x gd| 1Wkh iur qwur rp r q vkh iluwia rru vkææ rrv dn h Gul J duædqg x riilfh/ p lq xv vkh

rshudvqj urrp vn| dj kw uhp dlqv1 Rvkhu vp dæ kr vslvæv lq vkh duhd vkdwvælvng lq urz kr xv h v dæv kdg vkhlu rshudvqj urrp v r q vkh w s iæ rru iru vkh dj kw/ d q g væli kdg w fduj sdvhqw xs dæ vkh vælvw Ó xqgrxevngd sduwri Ôkh wvhqrxv di h z klfk qfhhvævulq dffrp sdqlhv vkh surihvwrq ri qxuvh1

Sq p r xvk

Krvslvæv lv qr w dqflhqw klwv uj z khq | r x fr qvlghu vkdw shrsch væv dylqj z huh vhdvng el Gul J duædqg1 Ulfkdug Eur z q ri Vthp r q w Vvhhw/ iru lqvædqfh/ qrz lq klv ævln hlj kvhv/ vdz Gul J duædqg z khq kh z dv d fklqg1 Ô

Gul J duædqg*viluwia rru riilfh1

Ylfwuldq dj kw il{vkvhv d q g Gul J duædqg x sr wædlwk dqj lqj ehvz h h q vkh erz z lqgr z v1Wkh vklug iæ rru lv dæv uhfrjql}dæd dv vkh Vævæv uld q z dug/ ixuqlvkhg el vkh Væ h q y h Nqljkw d q g Gdxj kvhv ri Vævæv u r q h ri vkh vhf uhvvr flhv hv ri z klfk Gul J duædqg z dv d p hp ehul Dækrxjk vkh urrp v r q vkh irxwv iæ rru kdyh ehq uhfrqilj xuhg/ vkh

j uhz xs z lvk d exqfk ri khur hv/ Ô kh vd| v1



Wkh deryh skr w v du h iur p Z 1 Q1 Kduwkr uq/ hg1 Dq Hud ri Surjuhv d q g Surp lvh/ 4; 9604<43/ Wkh Uhdj lrxv/ P r udd/ d q g Hgxfævraqdæ Ghvhæsp h q w ri vkh Dp hulfdq Qhj ur v lq fh Kl v Hp dq flsdvraq1 4<431

Qr vlv=

14` Kduwkr uq Z Q/ hg1Wkh Fæivw q 1P D` Frqihuhqfh/ Dq Hud ri Surjuhv d q g Surp lvh/ 4; 9604<43/ Wkh Uhdj lrxv/ P r udd/ d q g Hgxfævraqdæ Ghvhæsp h q w ri vkh Dp hulfdq Qhj ur v lq fh Kl v Hp dq flsdvraq1 Er w w q/ P D= Sulv læv Sxædvklqj Fr > 4<431

15` J duædqg FQ1Uhsruwri vkh Sq p r xvk Krvslvæv d q g Qxuvhv x Wædlq lq j Vfkrr d l 4<471

16` Wkh J xdugl d q / z klfk z dv Er w w q x eæfn qhz vsdshu/ z dv fr Ørxqghg el Z lædp P r qur h Wæv w hu l q 4<341Wæv w hu z dv vkh hglw ut

17` Er w w q 533 Fr usruvraq1+4< 9,1Eæfn Er w w q l d l

18` Herq| P dj d|lqh1Mlq 4<7<=751

19` Wkh Fuvv/ d q riilf l d o p dj d|lqh ri vkh Qdvraqdæ Dwr flævraq iru vkh Dgydqfhp h q w ri Fræuhg Shrsch -QDDFS,/ z dv irxqghg el Z 1E1 Gx Er lv l q 4<431Lwz dv d p dmu y h k l f d h iru w w u h v d q g sr h p v el eæfn z ulvhu gxulqj vkh Kduvhp Uhqdlvædqfh1

I urp vkh EXVP Dufklyhv

Wklv lv d 4<6< skr w ri Er w w q P hglfdo Fhqvhu v Grz d q j Exlqglqj 1 Wkh exlqglqj z dv fr p sdvng lq 4<6: iru' 49 p lævraq1Lwkdq 5;; ehgv d q g 47 rshudvqj urrp v lq lw < w w u h v 1 Wægd| / l w k r x v h p r w æ riilfhv1

P hglf do Hgxf dvr q

Oder ulqj dqg Ohduqlqj lq vkh Dp hulfdq Uhlghqf | = Edæqf lqj Hgxf dvr q dqg Vhuylf h lq vkh Qlqhwhhqv Fhqvx ul dqg Wgdj

Dyudkdp j 1Frrshu/ P G
Lqvhuqdo P hglf lqh Uhlghqf
Ehvk Lvudho Ghdf r qhv P hglf do Fhqvhu

Gdylg K1Ur ehuv/ P G
Dvvr f ldvh Sur ihvvr u ri P hglf lqh/ Kduydug P hglf do Vf kr r o
Dvvr l f dvh Glhuf w u/ Fduo Ml Vkdslur Lqvwhv v h ir u Hgxf dvr q) Uhvhduf k
Ehvk Lvudho Ghdf r qhv P hglf do Fhqvhu

Wkh kdyh ehq vhyudo h f f k d o v k l i w l q v k h
Dp hulfdq Uhlghqf |
Dlqlqj æqgvf dsh lq
vkh ævw 483 | hdu/ lq f æ glqj vkh
Rvdudq uhyr æv r q dw Mkqv
Krsnlqv lq vkh 4; ; 3v/ vkh æderu
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z lvk vkh Qh{w Dffuhglv r q
Vj vhp / ghdqhdvng ej vkh
Dffuhglv r q Frxqf loir u J udgxdv h
P hglf do Hgxf dvr q 1 Vkh uds lg sdf h
ri fxuhqwdqg suhglfvng fkdqj h lq
khdv f d u h g h d y h u j p r g h v # h j 1
sdj Ar u shu ir up dqf h/ sdv hqv
fhqvuhg p hglf do kr p hv/
dffrxqvledh fduh r u j d q j } d v r qv/
hv r 1 vkr x æ eulqj derxw ixvkh u
ædj h d f d h v k l i w l q k r z j u d g x d v h
p hglf do h g x f d v r q # j P H, l v v k d s h g
lq v k l v f r x q v u j / z l v k q h z h p s k d l v
r q d p e x æ v u j v a d l q l q j d a g v k h
v n d f k l a j r i y d o x h æ g g h g f d u h 1 4
Dv z h d s s u r d f k v k l v q h z

shurg z lvk dqv f l s d v n g f k d q j h v/
vkhuh lv y d o x h l q u h f r q v l g h u l a j r q h
ri vkh ixqgdv hqvæo gx d d v h v
xqghuslqqlqj Uhlghqf | v a d l q l a j 0
vkh lqvæqvlf v h q v l r q e h v z h h q
Uhlghqf dv æderuhv dqg Ohduqhu 1
Rq vkh r q h k d a g / u h l g h q w d u h
uhv s r q v l e d h i r u k h æ l a j k r v s l v æ v
u x q r q d g d j O r Q g d j e d l v / z k h v k h u
l w l v v r f d æ n g Ô f x v Æ z r u n r u v k h
f r j q l v y h d f r p s d h { d v s h f w r i
s d v h q w f d u h 1 R q v k h r v k h u k d a g /
Uhlghqf | surj u d p v d u h u h v s r q v l e d h
i r u v a d l q l a j v k h p w e h f r p h
f r p s h v h q w f d q l f d a v / v n d f k h u / d a g
r i v n g v f k r æ w / z l v k e r v k f d a q l f d o
h { s h u h q f h d a g g l g d f w f f x u l f x æ 1
V k l v g l f k r w p | l q i r u p v h y h u j
d v s h f w r i d u h l g h q w z r u n d i h 1 l q
h i i f w v k h u h h { l w w d v r f l d o f r q w a f w
e h v z h h q s u r j u d p v d a g u h l g h q w 1 l q
h { f k d a j h i r u g h i l q h g l q f r p h v /
k h æ l a j v k h k r v s l v æ o i x q f v r q l q d a g
h i i l f l h q w p d a q h u / d a g v n d f k l a j
æ q l r u f d a q l f d a v Ò e r v k æ q l r u
Uhlghqf dqg p hglf do v x g h q w 0
k r v s l v æ v a d l q d a g j l y h v k h l u

l p s u p d v x u v u h l g h q w r 1
K l w u l d a g N h q q h v k
O x g p h u h k d v æ r n h g h { v n q v l y h d d w
v k l v g l q d p l f l q æ d v h q l q h v h h q v k d a g
h d u q O p l g v z h q v h v k f h q v x u j
v a d l q l a j s u r j u d p v 1 4 5 l u r p v k h
R v d u d q v a d q v l v r q w p r g h u q
U h l g h q f | s u r j u d p v l q v k h æ d v h
4; 3 3 v r q z d u g / k r v s l v æ v d a g
d f f u h g l v r q e r g l h v k d y h z u h v n g h
z l v k i l q g l a j v k h r s v p d o e d æ d a g h
e h v z h h q u h l g h q w æ æ d e r u l a j d a g
O h d u q l a j 1 Q r v æ d / v k l v g l f k r w p |
s u h g d v n v h y h q v k h h d u h w i r u p d o
U h l g h q f | s u r j u d p v / k d y l a j u r r w d v
i d u e d f n d v v k h s r w æ d s s u h q w f h h u d
l q v k h h d u q q l q h v h h q v k f h q v x u j 1 D w
v k h h a g r i v k h h l j k v h h q v k f h q v x u j
p h g l f d o d s s u h q w f h v k l s v z h u h v k h
q r u p > l a g l y l g x d o s x s l æ z r x æ g
O h d u q d w v k h v l g h r i l a g l y l g x d o
f d a q l f d a v 1 4 6 E l v k h q l q h v h h q v k
f h q v x u j / z l v k v k h u v h w s u r p l q h q f h
r i v h y h u d o x q l y h u l v v æ d v h g p h g l f d o
v f k r r æ / s r w æ j u d g x d v h k r x v h
s k j v l f d a g d a g k r x v h v x u j h r q
s r v l v r q v s u r d i h u d v n g 1 V k h v h

wadlqhv vhuylg vpladu urdhv dv
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dggvvrq w sdvhwqfdh gxvhw1 ^8
Rvkhv Qvz` vkw vkh p hglflqh
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vnhq/0 rylvhhlaj qxwaj sudvlf h
dgg sdvhwqdgkhuqh/ ^9` daz kldh
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vkw ri vkh qlqhvnhqv fhwvuj1
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fhqwdo JPH vnhw/ p daj vlvv
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gxddv idf l q j u h l v g h q w 1 Z k l d h s d l g
iru vkh l v f d q f d o a d e r u v k u r x j k
uhvlyh ydox xqlw, / vkh| k d y h
udv h q e h q f r p s h q v d v n g i r u
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qhng w dgdsw w vkh fkdaj l q j
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r u j d q j d v r q v 1 V k l v z l v u h t x l v h
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ydoxh Qggghg fduh/ t x d d v j p h v l f v
d a g s d v h q w v d i h v j 1 W f p h h w v k h v h
qhngv/ vkh idfxv z l v u h t x l v h

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z l v k z k l f k v k h | k d y h d p l v n g
h{shuhqf h1

Z kldh uhlvghq| lq vkh
vz hqv| Qlvwvfhqvuj z l v l q p d a j
z d l v q r w u h v p e d h z k d w f d p h
ehiruh/ vkh vnvqrq ri uhlvghq dv
ader uhu dgg dnduqhu z l v d a p r w
vxuhq uhp dlq1 Lvlv qh l v k h u q h z / q r u
vlp sd d surgxvvrw vkh Rvdudq
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Dp hufdq p hglflqh dgg
xqghuadqglaj vkrv urrw/ dgg
dssuhf l d v a j v k h l p s d f w r i p r g h u q
khvkv f d u h r q v k h u h l v g h q w d v e r v k
dnduqhu dgg ader uhu/ z l v h q v x u h d
v p r r v k h u v d q v l v r q w v k h q h v
j h q h u d v r q r i u h l v g h q |
surj udp v1



Dfnqrz chqj p hqv=Vkh dxvkrw z r x a g d n h
w h{shuwh vkh l v j u d l v x g h w G u l V f r w w
S r g r a n | / G u l U l f k d u g V f k z d u y w h l q / d a g
G u l H x j q h E h u m q i r u v k h l v x e w a d v l y h
d a g v k r x j k v i x o f r q v l e x v r q v w v k h
i r u p x a d v r q d a g h g l v a j r i h d u h u y u m r q v
r i v k l v d u l f d i 1 V k h | d a r z r x a g d n h w v k d q n
P u l m r n H f n u w r i v k h l u d a q l v D 1 F r x q v z d l
Q e u d j r i P h g l f l q h i r u k l v d v l w a d q f h z l v k
a f d v a j s u p d j v r x u f h 1

Uhihuhqf hv=

^4` Z hlqehuj hu/ Vh1 Surylqaj Klj k0
Ydox/ FrwvFrqv lrxv Fduh=D Fvlf do
Vnyhqv Jhghudo Frpshvqf| iru
Sk|vflldqv1 Dqqdov rivlvnqdo P hglflqh1
5344>488=6; 906; ; 1

^5` Oxgphuh/ NP1 Wp h w Khde=
Dp hufdq P hglf do Hgxfvvrq iurp vkh Vkuq
ri vkh Fhwvuj w vkh Hudri P daj hg Fduh1
Qhz \run/ Q\ = R{irug Xqlyhuwv
Suhw>53381

^6` Urvhqehuj / FH1Vkh Fduhri Vvdaj hu1
Edavp ruh/ PG= Vkh Mkvv Krsnlqv
Xqlyhuwv Suhw>4; ; 1

^7` Vdvqvfvvrq ri vkh Krp h r s d v k l f
P hglf do Vrf l h v j r i v k h V v l v n r i Q h z \ r u n i r u
v k h \ h d u 4; : 5 / Y r a p h [1 D a e d q | / Q \ =
V k h D u j x v F r p s d q | / S u l q v n u > 4; : 5 =
7851

^8` Hgg| / W D q D f f r x q w r i v k h Q h z \ r u n
K r v s l v d v Q h z \ r u n / Q \ = F r a d q v d a g
F r 1 4; 4 4 = 7 5 / 8 5 1

^9` Fkdvhu ri vkh Vrf l h v j r i v k h Q h z 0 r u n
K r v s l v d v d a g v k h Q z v U h a d v a j V k h u h w /
z l v k v k h E | Q a z v d a g U h j x a d v r q v r i v k h
l q v l v v r q / d a g v k r v h r i v k h E a r p l a j g d h
D v j a p i r u v k h l a v d a h 1 Q h z \ r u n / Q \ =
M k q U 1 P x j r z q / S u l q v n u > 4; 7 8 = 6 6 1

