

Gh'7c`i a VU': U`g`HUga Ub]Yb` '5`Ygž`k Ug G]Y`k]ggYb`a ØggYb

9]b`j`c`gh`AbX][Yf`K UggYfZU`ZØ\fyf`ni`XYb`Gh'7c`i a VU': U`g`
HUga Ub]Yb`"6Ygi W\Yb`G]Y`X]YgYb`Yd]gW\Yb`K UggYfZU`"ja`
GU]bh'7c`i a VU`GhUhY`FYgYfj`Y`]b`XYf`BÀ\Y`j`cb`DmYb[UbU`"
@YgYb`G]Y`X]YgYb`XYhU]`"YfhYb`K UggYfZU`ZØ\fyfž`XYf`Ui`Z`
a`Y]bYf`9fZU\fi`b[`a`]h': chc`g`VUg]Yfhž`i`a` `Àfyb`6Ygi W\`ni`
]bgd]f]Yfyb`"B UW\XYa` `k`]f`X]Y`YhnhYb`HU[Y`bUW\`Y]bYa`
gW\Y]bVUf`YbX`cgYb`FY[Yb`]b`i`bgYfYa` `J Ub`Y]b[YgdYffh`
k UfYbž`k UfYb`k`]f`VY[Y]ghYfhž`YbX`]W\`k`]YXYf`
fUi`gni`_ca`a`Yb`i`bX`a`]h`XYf`9f`_i`bXi`b[`ni` `VY[]bbYb`"8]Y`
YfghY`5b`Ui`ZghY`Y`k`Uf`Gh`7c`i a VU': U`g`]b`XYf`BÀ\Y`j`cb`
DmYb[UbU`"8]YgYf`K UggYfZU`"gh`a`]h`ØVYf`- \$`A`YhYfb`Y]bYf`
XYf`\ØW`ghYb`K UggYfZÀ`Y`HUga Ub]Ybg`B UW\`gc`j`]Y`FY[Yb`
k UfYb`k`]f`ØVYf[`ØW`_]W\ž`]b`/`Ua`d^Y`"d/`

9]b`j`c`gh`AbX][Yf`K UggYfZU`ZØ\fyf`ni`XYb`Gh'7c`i a VU': U`g`
HUga Ub]Yb`"6Ygi W\Yb`G]Y`X]YgYb`Yd]gW\Yb`K UggYfZU`"ja`GU]bh`
7c`i a VU`GhUhY`FYgYfj`Y`]b`XYf`BÀ\Y`j`cb`DmYb[UbU`"@YgYb`G]Y`
X]YgYb`XYhU]`"YfhYb`K UggYfZU`ZØ\fyfž`XYf`Ui`Z`a`Y]bYf`9fZU\fi`b[`a`
]h': chc`g`VUg]Yfhž`i`a` `Àfyb`6Ygi W\`ni`]bgd]f]Yfyb`"

B UW\XYa` `k`]f`X]Y`YhnhYb`HU[Y`bUW\`Y]bYa` `gW\Y]bVUf`YbX`cgYb`
FY[Yb`]b`i`bgYfYa` `J Ub`Y]b[YgdYffh`k UfYbž`k UfYb`k`]f`VY[Y]ghYfhž`
YbX`]W\`k`]YXYf`fUi`gni`_ca`a`Yb`i`bX`a`]h`XYf`9f`_i`bXi`b[`ni`
VY[]bbYb`"

8]Y`YfghY`5b`Ui`ZghY`Y`k`Uf`Gh`7c`i a VU': U`g`]b`XYf`BÀ\Y`j`cb`
DmYb[UbU`"8]YgYf`K UggYfZU`"gh`a`]h`ØVYf`- \$`A`YhYfb`Y]bYf`XYf`
\ØW`ghYb`K UggYfZÀ`Y`HUga Ub]Ybg`B UW\`gc`j`]Y`FY[Yb`k UfYb`k`]f`
ØVYf[`ØW`_]W\ž`]b`]b`j`c`Yf`DfUW`h`ni`gY\Yb` `i`bX`k`]f`k`i`fXYb`
b]W\h`Yb`h`h`i`gW`h`"

U`h1 GH`7C@ A 65 : 5@@G`5I GG=7 < HGD@5H: C F A 2

U`h1 GH`7C@ A 65`K 9; 2

U`h1 GH`7C@ A 65`K 5GG9F: 5@@H5GA 5B =9B 2

K c`]gh`Gh" `7c`i a VU` : U`g`

8Yf`K UggYfZU``VYZ]bXYh`g]W`ja`Gh" `7c`i a VU` : U`g`GhUHy`F YgYfj Yž
]b`XYf`B`À\Y`XYg`_`Y]bYb`8cfZYg`DmYb[UbU" `8]Yg`]gh`Yhk U`&
5i hcghi bXYb`j cb`@Ui bWghcb`cXYf`%`Ghi bXY`j cb`6UmicZ:]fYg
YbhZYfbh"

K`À\fybX`G]Y`XYb`Y][Ybh`]W`Yb`K UggYfZU``j cb`XYf`GhfU»Y`Ui g
gY\Yb`_`ÖbbYbž`Z0\fh`Y]b`_i fnYf`K Y[`ni`Y]bYf`5i gg]W`hgd`UhhZcfa
X]fY`_hi bhYf\U`V`XYg`K UggYfZU``gž`k Ug`Y]b`A`i`gg`]ghž`k Ybb`G]Y`X]Y
K UggYfZ`Ä``Y`VYgi W`Yb"

8]Y`GhfU»Yž`X]Y`ni a`5i g[Ub[gdi b`h`XYg`K UggYfZU``g`Z0\fhž`]gh
Xi fW [Y\YbX`Ugd\U`h]Yfhi bX`Y]W`hni [`Ab[`]W`"K]f`_Ua Yb`c`bY
DfcV`Ya Y`]b`i bgYfYa` `[fc»Yb`J Ub`Ub" `5`YfX]b[g`]gh`X]Y`GhfU»Y`Ub
a UbW`Yb`GhY`Yb`Yhk Ug`_i fj][`i bX`Yb["

K]Y`_ca a h`a Ub`ni`XYb`Gh`7c`i a VU` : U`g`3

8U`Yg`_Y]bY`ÖZYbh`]W`Yb`J Yf`_Y`fga`]hhY``[]Vhž`_c`bnYbhf]Yfh`g]W`
X]YgYf`@Y]hZUXYb`XUfUi Z`a`]h`=fYa`Y][YbYb`J Yf`_Y`fga`]hhY`ni
XYb`Gh" `7c`i a VU` : U`g`ni` [Y`Ub[Yb"

; fi bXg`Ähn`]W`gc`hYb`G]Y`X]Y`cV][Y`D`B`Ui Z`=fYa` ; DG`cXYf
HY`YZcb`Y]b[YVYb" `G]Y[Y`Ub[Yb`Ui ZX]Y` Gh`7c`i a VU` : U`g`F`cUX`ž
X]Y`Y]bn][Y`9]b!`i bX`5i gZU\fh`ni a`DUf`_d`Uhn`XYg`K UggYfZU``g`
U`h1 GH`7C@ A 65 : Y`@H`J`C`B`8`9`F`G`H`F`5`G`G`9`2`6`]W`_Ui Z`XYb
K UggYfZU``j ca`DUf`_d`Uhn
Jcb`Gh" <Y`Ybg`K Ybb`G]Y`j cb`Gh" <Y`Ybg`Ui g`UbY]gYbž`fYW`bYb
G]Y`a`]h`Yhk U`" \$`A`]bi hYb` : U\fnY]hž`i a`X]Y`K UggYfZ`Ä``Y`ni
YffY]W`Yb" `B`Y\`a` Yb`G]Y`ni b`ÄW`gh`XYb`HUga` Ub`<][\k Umž`V]g`G]Y
GW`]`XYf`ni f` Gh`7c`i a VU` : U`g`F`cUX` `f7 (&, Ł`gY\Yb" : c` [Yb`G]Y
X]YgYf`GhfU»Y`Z0f`%) `A`]bi hYb`fP`%`?`]ca`YhYfLž`VY]cf`G]Y`XYb
K UggYfZU``dUf`_d`Uhn`YffY]W`Yb"

J cb '@Ui bWghcb J cb '@Ui bWghcb Yfk UfhYh'G]Y 'Y]bY '&!ghØbX][Y
: U\fh'ni 'XYb'K UggYfZÀ''Ybž'k cVY]'G]Y 'k]YXYf'XYa 'HUga Ub
<][\k Umžc`[Ybž'V]g'G]Y 'X]Y '5Vnk Y][i b['Ui Z'X]Y 'Gh''7c`i a VU
: U`g'F cUX 'YffY]W\Yb"

?UfhY 'XYf'Gh''7c`i a VU': U`g'i bhYb'Z]bXYb'G]Y 'Y]bY '?UfhY 'XYf'@U[Y
XYg'K UggYfZU`g]b'6Yni ['Ui Z'X]Y 'GhfU»Y '\]bY]b''G]Y 'nY][h'Ui W\
XYb _i fnYb'K UbXYfk Y['\]bi bhYf'ni f'5i gg]W\hgd`Uhhžcfa "
U'h1 Gh'7c`i a VU': U`g'?UfhYž'i a 'j cb'DmYb[UbU'ni a 'K UggYfZU`
ni '[Y`Ub[Yb 2Ei Y`Y.'HUga Ub]Yb'DUf_g

8Yf'Gh''7c`i a VU': U`g'K U`_

K UbXYfghfYW_Y.'%ž&`_a '\]b'i bX'ni fØW_
K UbXYfXUi Yf.'&\$!' \$'A]bi hYb'fYhci f
GW\k]Yf][_Y]h'9]bZUW\

8Yf'Gh''7c`i a VU': U`g'K U`_VY[]bbh'Ua 'DUf_d`Uhm'i bX'gW\Àb[Y`h
g]W\XUg'HU`\]bUVž'ØVYfei Yfh'Y]bY'_i fnY'6fØW_Y'i bX'YbXYh'Ub
Y]bYf'VfY]hYbž'\Ø`nYfbYb'5i gg]W\hgd`Uhhžcfa 'X]fY_h'i bhYf\U`V'XYg
K UggYfZU`g"

U'h1 GH'7C@ A 65': Ÿ@@9'; 9<9B 2
5a '5bZUb['XYf'K UbXYfi b['[]Vh'Yg'Y]bY'_Y]bY'<ØhhY'a]h
-žcfa Uh]cbYb'ni f'?c`cb]U'[YgW\W\hY'i bX'Y]b'k Yb]['ØVYf'XYb
\]ghcf]gW\Yb'Di V'ja 'DUXXcW_fMY]'DmYb[UbUŁ"
U'h1 < , HH9'5I : '89A 'GH'7C@ A 69': 5@@G'K 5@? 2
8Yf'K Y['ni a 'K UggYfZU`']gh'n]Ya `]W\ _i fn'i bX'XYf'6cXYb']ghZYgh
i bX'[i h'UV[Yghi žh''5i ZXYa 'K Y['ni fØW`bUW\cVYb'[]Vh'Yg'Y]bY
'Y]W\hY'GhY][i b[ž'UVYf'gY'Vgh'X]Y'i bhfU]b]YfhYghYb'j cb'i bg'XU
XfUi »Yb'VfUi W\Yb'g]W\ _Y]bY'Gcf[Yb'ni 'a UW\Yb"

K]f'\UVYb'XYb'GdUn]Yf[Ub['ni 'X]YgYa 'Yd]gW\Yb'K UggYfZU`
[YbcggYbž'XU'k]f'\b'gY\fa U'Yf]gW\ZUbXYb''9g[UV'j]Y'Y
; Y`Y[Yb\Y]hYbž'Ubni \U'hYb'i bX': chc'g'j ca ': 'i ggž'XYf'6fØW_Yž
XYa 'K U'X'Ui g'A UbbZUfbYb'i bX'U'hYb'A mfhYb!FY[Ybk U'XVÀi a Yb
ni 'a UW\Yb"

U'h1 : 5FB9'5I : '89B 'GH'7C@ A 65': 5@@G'K 9; 2
U'h1 F9; 9BK 5@8': 5FB'I B8': @ GG'A 'GH'7C@ A 65': 5@@G

GH5H9'F 9G9F J 9 2

U'h1 GH'7C@ A 65': Y@@9'; 9< 9B 2

I`h]a Uh]j Y`hUga Ub]gW\Y`F Y]gYfYggci fW

⇒W` \c ZYž` ⇒bYb` [YZÀ`h`X]YgYf`6`c [VY]hfU[" `J YfdUggYb`G]Y`ZØf
k Y]hYfY`F Y]gY!`i bX`5VYbhYi Yf]bgd]fUh]cbYb`Xi fW`HUga Ub]Yb
b]W\h`a Y]bY`i`h]a Uh]j Yb` ; i]XYg`i bhYb"

`* &`Yd]gW\Y`5_h]j]hÀhYb`]b`HUga Ub]Yb`
, VYfbUW\hi b [ga Ò [`]W\ _Y]hYb`]b`HUga Ub]Yb`fVYghY`C fhYŁ` `&`
YfghUi b`]W\Y`K UggYfZÀ`Y`]b`HUga Ub]Yb` ` `) `A i gh]Xc!
K UbXYfi b [Yb`]b`HUga Ub]Yb`

Gh"7c`i a VU': U`g

Gh'7c`i a VU': U`g` < Ò\Y. :- \$`A YhYf

9g`ØVYffUgW\h`b]W\hž`XUgg`Gh"7c`i a VU`U`g`Y]bYf`XYf`\ ÒW\ghYb
dYfa UbYbhYb`K UggYfZÀ`Y`HUga Ub]Ybg` []`h`K Ug`g]Y`XUa]h
a Y]bYbž`]ghž`XUgg`Yg`XUg` [Ubny`ϩ\`f`ØVYf`Ài Zhž`Ui W\`c`bY`j]Y`
B]YXYfgW\`U [" `8 Ug`Y]Y [h`XUfUbž`XUgg`XYf`K UggYfZU`Y`]b`f]Yg][Yg
9]bni [g [YV]Yh`\Uhž` (&\$`\$`< Y_hUf`XUj cb`Y]bgW\`Y]» `]W\`A h"J]W\c]U
i bX`A h"5`VYfh"

8Yf`6Ygi W\`bUW\`ghUf_Ya`F Y [Yb`VYXYi hYhYž`XUgg`Yg`VY]`i bgYfYf
5b_i bZh`UVgc`i h`VfØ`hY"9g`k Uf`gW\k]Yf][ž`ØVYf\Ui dh`Ui ZXYf
5i gg]W\hgd`Uhhžcfa`ni`ghY\Ybž`c`bY`bUgg`ni`k YfXYb`°

U'h1 GH'7C@ A 65': 5@@G'5I GG=7 < HGD@5H: CFA 2

K]f`k UfYb`YXcW\`gY\`f`Zfc`ž`XUgg`k]f`bUW\`ghUf_Ya`F Y [Yb`XYb
5i gZi [`ni a`K UggYfZU`Y` [Ya UW\h`\UVYbž`XU`k]f`Y]b][Y
Y]bn][Ufh][Y` : chc`g`Ui ZbY\`a Yb`_cbbhYbž`X]Y`XYb`K UggYfZU`Y`]b
gY]bYf [Ubnyb`DfUW\h`nY][Yb`°

U'h1 K 5GG9F: 5@@GH"7C@ A 65ž`H5GA 5B ⇒B 2

, VYf`XUg`< c hY` ` `8 Yf`Di V`]a` : U\ fYf`U [Yf

5i ZXYf`9]bZU\fh`ni a`Duf_d`Uhm`XYg`K UggYfZU`g`\UVYb`G]Y

a Ò[`]WYfk Y]gY`GW.]XYf`ni a `<chY`` Di V`]b`h\Y`DUXXcW_
[YgY\Yb"

8]Yg`]gh`Y]b`\]ghcf]gWYg`<chY`ž`XUg`ØVYf`%&\$`đ\fy`]b`X]Y
?c`cb]U`nY]h`ni fØW_fY]W`h`HUhgÅW`]W`]gh`XYf`K UggYfZU``gY`Vgh
bUW`XYf`fUi`VYbUbbhž`X]Y`XYb`Di V`[YVUi`h`\Uhž`U`g`]\fy`đ`b[g
]\b`ZUbXYbž`U`g`g]Y`XYb`bU\Y`[Y`Y[Y`bYb`FY[Y`bk`U`X`Yf`_i`bXYhYb"
U`h1`HUga`Ub]gWYf`FY[Y`bk`U`X`2

A Y`f`Yd]gWY`5VYbhYi`Yf`]b`HUga`Ub]Yb

⇒W`\cZYž`XUgg`X]YgYf`?i`fnZØ\fyf`ZØf`XYb`6Ygi`W`XYf`Gh"7c`i`a`VU
:U`g`]b`XYf`BÅ\Y`j`cb`DmYb[`UbUž`HUga`Ub]Ybž`VY]`XYf`D`Ubi`b[
⇒fyf`FY]gY`\`]ZFY]W`k`Uf"

K`Y]hYfY`bØhn`]WY`5VYbhYi`YfZØ\fyf`i`bX`Yd]gWY`HUnnm!
FY]gY]bgd]fUh]cb`Z]bXYb`G]Y`]b`Y]b][`Yb`XYf`UbXYfYb`FY]gYn]Y`Y`]b
[`Ubn`HUga`Ub]Ybž`X]Y`]b`X]YgYa`6`c[`VY\UbXY`h`k`YfXYb"

A 9⇒B 9`?`5A`9F`5`I`B`8`:`C`HC`5I`GF`_`GHI`B`;

- Gd]Y[Y``cgY`?`Ua`YfU.`7Ubc`b`F`)
- 8fc`bY.`8`≠A`Uj`]Wdfc`&
- `*`\$!`;`fUX!5W]cb!`?`Ua`YfU.`≠ghU`*`\$`C`bY`L`&
- @UbXgW`UZhg`V`Y`_`h]j`.`7Ubc`b`F`:``%`!)`)``a`a`Z#&`,`@
- 5``fci`bX!C`V`Y`_`h]j`.`7Ubc`b`F`:``&`(``%`\$)``a`a`Z#`@
- HY`Yc`V`Y`_`h]j`.`7Ubc`b`F`:``%`\$`\$`)``\$`\$`a`a`Z#`#`ž`)+`ž%`@
- @Ub[`Y`5`_`h]j]cbgghUb[`Y.`≠ghU`*`\$`≠j`]g]V`Y`Dc`Y`fb`i`Y`hH]a`YŁ
- @UbXgW`UZhg`]bgYbZ]`hYf.`<`cmU`7]fW`Uf`Dc`Uf]nYf
- ?`Ua`YfUfi`W`_`gUW`_`.`!`Ghcd`H]`cdU
- @]YV`]b[`gZchcni`VY`\Øf.`DYU`_`8Yg][`b`7Udhi`fy`7`]d

9]bY`@]ghY`a`Y]bYf`Ya`dZc`\YbYb`:`chcUi`gfØghi`b[`fY]bgW`Y]Y»`]W
k`Ug`]W`VYbi`hY`i`bX`k`Ufi`a`Ł]bXYgh`Xi`]b`a`Y]bYa`@Y]hZUXYb`ZØf
?`Ua`YfUU`i`gfØghi`b[`ZØf`X]Y`FY]gY"

K`Ybb`G]Y`Y]bYg`XYf`:`chcg`Ui`ZX]YgYf`K`YVg]hY`j`Yfk`YbXYb
a`ÒW`hYbž`VYgi`W`Yb`G]Y`V]hY`a`Y]bY`@]nYbn]Yfi`b[`ggY]hY`ž`i`a

\YfUi gni Z]bXYbž'k]Y"'≠W 'j Yf_Ui ZY'Ui W' d'fcZYgg]cbY`Y
? i bghXfi W_Yž'VYgi WXYb'G]Y'a Y]bYb'Df]bh'GhcfY'cXYf'_cbhU_h]YfYb
G]Y'a]W'X]fY_h'ZØf'Nc''UVnØ[Y'j cb'6]'XYfb'Ui Z'K Y'GY_Y_'HfUj Y`"
"

8YhU]`g

6Ygi WXYb'G]Y'i bg'Ui Z.'Y]bY!fY]gY"XY