

≠b_`i g]cbgdfY]g'&\$&(. 'J cfV]'XYf'XYf
≠b_`i g]cb`]b`B ØfbVYf[Yf`l bhYfbY\ a Yb

9fZU\ fYb`G]Y`a Y\ f`ØVYf`X]Y`DfY]ghfÀ[Yf`XYg
≠b_`i g]cbgdfY]gYg`ZØf`X]Y`K]fhgW UZh`&\$&(ž`X]Y
\ YfUi gfU[YbXY`6Y]gd]Y`Y`ZØf`X]Y`5i gV]`Xi b[`i bX
6YgW`ÀZh][i b[`j cb`A YbgW`Yb`a]h`6Y\`bXYfi b[Yb`nY][Yb`
l bhYfbY\ a Yb`k]Y`X]Y`7ca`a YfnVUb`_`5; `i bX`X]Y
š [YbX\`YfVYf[Y` ; cg`Uf`gYhnYb`A U» gh`AVY`ZØf`≠b_`i g]cb`Ua
5fVY]hgd`Uhm`"9bhXYW`Yb`G]Y`ž`k]Y`≠b_`i g]cb`b]W`h`bi`f
[YgY`gW`UZh]W`Y`J`YfUbhk`cfhi`b[ž`gcbXYfb`Ui`W`
k]fhgW`UZh]W`Yb`9fZc`[`ZØfXYfh`



6Yf`]bž, "C_hcVYf'&\$&(` `9]b`Ui ZfY[YbXYg`NY]W`Yb`XYf`<cZbi b[` °
8Yf`≠b_`i g]cbgdfY]g`ZØf`X]Y`K]fhgW UZh`&\$&(`k]fX`j Yf[YVYb`i bX
\ YVh`X]Y`VYa Yf`_Ybgk YfhYb`9ffi b[YbgW`UZhYb`j cb`l bhYfbY\ a Yb
\ Yfj cfž`X]Y`g]W`ZØf`X]Y`6YgW`ÀZh][i b[`j cb`A YbgW`Yb`a]h
6Y\`bXYfi b[Yb`ghUf`_a UW`Yb`"A]h`XYa `A chhc` `≠b_`i g]cb
ØVYfnYi [h`k YfXYb`j]Yf`\YfUi gfU[YbXY` :]fa Yb`Ui g`6UmYfbž
B]YXYfgUW`gYbž`<YggYb`i bX`BcfXf\Y]b!K YghZU`Yb`Ui g[YnY]W`bYh`

9]b`k U\ f\ UZh`VYXYi hYbXYg`9fY][b]gž`XUg`U`g`J cfV]`X`Z0f`XYb
[YgUa hYb`5fVY]hga Uf_h`X]YbYb`gc`

C`UZ; i hhnY]hž`XYf`W\ Uf]ga Uh]gW\Y`J cfghUbXgj`cf]hnYbXY`XYg
I bhYfbY\`a Ybg: cfi a gž`VYhc`bh` 8]Y`DfY]ghfÅ[Yf`VYk Y]gYbž`XUgg
`b`_i`g]cb`b]W\ h`bi`f`[Y`]b[Yb`_Ubbž`gcbXYfb`Y]b`YW\ hYf`; Yk]bb`Z0f
U`Y`]gh` `b`gY]bYf`_fUZh] c`Yb`5bgdfUW\Y`a UW\ h`Yf`_`Uf.` 8]Y
; f0» Y`cXYf`6fUbW\Y`Y]bYg`I bhYfbY\`a Ybg`gd]Y`h`XUVY]`_Y]bY
F c`Y` 8]Yg`i bhYfghfY]W\ h`X]Y`J]Y`ZU`h`XYf`Ui`g[YnY]W\ bYhYb
:]fa Yb`i bX`XYfYb`]bbcj Uh]j Yb`5bgUhn`ni`f`b`_i`g]cb`

8]Y`ghfU\`YbXYb`; Yk]bbYf`]a`F Ua`dYb`]W\ h

8]Y`7ca`a YfnVUb`_5;`hf]i`a`d\]Yfh]b`XYf`?UhY[cf]Y` ; fc» Y
I bhYfbY\`a Yb`i bX`?cbnYfbY" `8]YgY`D]cb]YfVUb`_`\Uh`VYfY]hg
&\$%,`Y]bYb`i`a`ZUggYbXYb`5_h]cbgd`Ub`ni`f`b`_i`g]cb`]b`]fYf
I bhYfbY\`a YbgghfUhY[]Y`j`YfUb`_Yfh`i`bX`gYhnh`A`U`Z0f`A`U`bYi`Y
A`U» gh`ÅVY" `8i`fW\`]fY`b`bcj`Uh]cbg`_fUZh]b`XYf`F`Y`_fi`h]Yfi`b[`i`bX
]b`VUi`_]W\ Yb`A`U» bU\`a`Yb`nY][`h]g]Y`Y]bXf0W`_]W\ ž`k`Y]`b`_i`g]cb
b]W\ h`bi`f`[`i`h`Z0f`X]Y`; YgY`gW\ UZhž`gcbXYfb`Ui`W\`Z0f`XUg`Y][`YbY
; YgW\`ÅZh]gh`

8cW\`b]W\ h`bi`f`X]Y`; fc» Yb`di`b`_hYb`_`b`XYf`?UhY[cf]Y
`a`]hhY`gh`ÅbX]gW\Y`I bhYfbY\`a Yb` `k`]fX`X]Y`F`9K`9`8`Uj`]X
<Y[Ya`Ubb`C`<;`Ui`g[YnY]W\ bYh" <]Yf`k`]fX`b`_i`g]cb`]b`]W\ h`bi`f`
dfcdU[]Yfhž`gcbXYfb`U_h]j`[`Y`YVh`i`i`bX`XUg`a`]hY]bYa`?cbnYdhž
XUg`XUg`DchYbn]U`_\Uhž`Z`ÅW\YbXYW`YbX`]b`0VYf`" "\$\$\$`F`9K`9!
A`Åf`_hYb`i`a`[`YgYhnh`ni`k`YfXYb`8`Uj`]X`<Y[Ya`Ubb`fY]»`h
[`YXUb`_]W\ Y`6`Uff]YfYb`b]YXYf`i`bX`nY][`hž`XUgg`b`_i`g]cb`i`bX
K`]fhgW\ UZh`<`UbX`]b`<`UbX`[`Y`Yb`_0`bbYb`"

5i`W\`X]Y`đ`[`YbX\`YfVYf[`Y`;`cg`Uf`[`_`Åbnh`a`]h`]fYa`j`cfV]`X`]W\ Yb
9b[U[Ya`Ybh]b`XYf`?UhY[cf]Y`?`Y]bY`I bhYfbY\`a Yb" `ā`f`@Y]hV]`X
]gh`_`Uf.`A`YbgW\Yb`a`]h`i`bX`c`bY`6`Y\]bXYfi`b[`Yb`UfVY]hYb`\]Yf
[`Y]W\ VYfYW\ h][`h`ni`gUa`a`Yb`8]Y`<YfVYf[`Y`gW\ UZh`Y]b`_`Yfn`]W\ Yg
I`a`Z`X`Z0f`]b`_i`g]j`Y`;`fi`ddYb`i`bX`gc`f[`h`XUZ0fž`XUgg
J`Yf`ÅbXYfi`b[`Yb`gh`ÅbX][`_`Ub[`Yghc»`Yb`k`YfXYb`"

< UbXk Yf_ 'a]h' < Yfn. 'GW fY]bYfY]'Dfc hnY

⊕ 'XYf' ? UhY [cf]Y' b]W hVYgW ĀZh][i b [gdZ]W h][Y' i bhYfbY\ a Yb
Yf\ Ā'hX]Y'GW fY]bYfY]'Dfc hnY 'XYb 'VY [Y\ fhYb 'DfY]g° <]Yf'nY][h
g]W ž'k]Y 'Y]b 'hfUX]h]cbY''Yf' < UbXk Yf_gVYhf]YV'X]Y' ⊕_i g]cb' [Ub n
gY'Vghj YfghĀbX']W]b'gY]bY'5fVY]hgUV'Āi ZY']bhY [f]Yfh"
DfU_h]_i a gd'ĀhnY' [YVYb'A YbgWYb'a]h'6Y\]bXYfi b [Yb'X]Y
7\UbW ž'HY]'Y]bYg'HYUa g'ni 'k YfXYb' 'Y]b'GW f]hž'XYf'j]Y'Yb'k]Y
Y]b'Gdfi b [VfYh]b'X]Y'6Yfi Zgk Y'h'YfgWY]bh°

8Yf'GW]fa \Yff'XYf'5i gnY]W bi b [ž' < i VYfhi g' < Y]'ž
6i bXYga]b]ghYf'Z0f'5fVY]h'i bX'Gcn]U'Ygž'gdf]W h'g]W 'j Y\Ya Ybh
Z0f'X]Y' ⊕_i g]cb'Ui g.' ; YfUXY'Ub [Yg]W hg'XYg'k UW gYbXYb
: UW_fĀZhYa Ub [Y'g'_Ubb'X]Y'XYi hgWY'K]fhgW UZh'b]W h'Ui Z
X]YgYg'DchYbn]U'j Yfn]W hYb" 'GY]bY'Y]bXf]b [']WYb'K cfhY
i bhYfghfY]WYb'X]Y'K]W h][_Y]h'XYf' ⊕]h]Uh]j Y' i bX'XYfYb'dcg]h]j Y
5i gk]f_i b [Yb'Ui Z'X]Y'K]fhgW UZh"

8Yf' ⊕_i g]cbgd fY]g']gh'a Y\ f'U'g'bi f'Y]bY'5i gnY]W bi b [' 'Yf']gh
Y]b'G][bU'Z0f'U''Y' i bhYfbY\ a Ybž'XUgg'Yg'g]W 'c\ bhž'6Uff]YfYb
UVni VUi Yb' i bX'j]Y'ZU'h'ni 'Z0f'XYfb" 'K Y]hYfY' ⊕Zcg'Z]bXYb'G]Y'Ui Z'
]b_ i g]cbgd fY]g"XY"

8Yf' ⊕_i g]cbgd fY]g'k]fX'j cb'dfca]bYbhYb' Cf [Ub]gUh]cbYb'k]Y
XYf'6i bXYgU [Ybhi f'Z0f'5fVY]hž'XYf'6i bXYgj YfY]b][i b ['XYf
8Yi hgWYb'5fVY]h[YVYfj YfVĀbXYž'XYf'7\UfhU'XYf'J]Y'ZU'h'Y"J "i bX
XYa 'i bhYfbY\ a Ybg: cfi a ' [YhfU [Yb"; Ya Y]bgUa 'gYhnYb'g]Y'g]W
Z0f'Y]bY']bWi g]j Y' i bX'j]Y'ZĀ'h][Y'5fVY]hgk Y'h'Y]bž'X]Y'Z0f'U''Y'Y]bY
YW hY'7\UbW 'V]YhYh"

8YhU]`g

6Ygi WYb'G]Y' i bg'Ui Z. 'a Y]b!VYf']b"bYh