

8 U`c`. 'Ni '6Ygi Wk 'Ua '\Y]» YghYb 'C fh'XYf 9fXY

K]f'VYgi Wk Yb'8 U`c`žY]bYb 'Y]b [YghØfnhYb 'J i ` _Ub_fUhYf
j c`Yf'gUi fYf'HY]Wk Yž []Zh][Yf'7\`cf!'i bX'GWk k YZY` [UgY`]b
XYf'8 UbU_]!GYb_Y`]b 'Ÿh\]cd]Yb" ðW 'k Uf'b]Wk h
Y]b [YgW ØW hYfhj cb 'XYf'5i gg]Wk hž'8 U`c`ni 'VYgi Wk Ybž'XUg
U`g'XYf'\Y]» YghY 'C fh'XYf'9fXY 'VYnY]Wk bYh'k]fX" 'C Vk c`\`X]Y
HYa dYfUhi fYb'fY [Y`a Å»][' () ..7'f%%' ... Ł'YffY]Wk hYbž'k i gghY
]Wk ž'XUgg'8 U`c`bUWk 'XYa '6Ygi Wk 'XYg'J i ` _Ubg'9fhU'5`Y`]b
XYf'FY []cb'Y]b 'GdUn]Yf [Ub []a 'Duf_'gY]b'k ØfXY' 'k Ybb'XYf
DUF_'Y]b'Y]b [YghØfnhYf'J i ` _Ub_fUhYf'j c`Yf'gUi fYf'HY]Wk Y
i bX'; Ymg]fY'k ÅfYž []Zh][Y'7\`cf!'i bX'GWk k YZY` [UgY" '8 U`c`
`Y [h'%%* 'a 'fl , \$'Zh'k'i bhYf'XYa 'A YfYggd]Y [Y`]b'XYf
8 UbU_]!GYb_Y`XYf'5ZUf!F Y []cb']b 'Ÿh\]cd]Yb' i bX']gh'HY]
/ Ua d^Y`]d/

K]f'VYgi Wk Yb'8 U`c`žY]bYb 'Y]b [YghØfnhYb 'J i ` _Ub_fUhYf'j c`Yf
gUi fYf'HY]Wk Yž []Zh][Yf'7\`cf!'i bX'GWk k YZY` [UgY`]b'XYf'8 UbU_]!
GYb_Y`]b 'Ÿh\]cd]Yb"

ðW 'k Uf'b]Wk h'Y]b [YgW ØW hYfhj cb 'XYf'5i gg]Wk hž'8 U`c`ni
VYgi Wk Ybž'XUg'U`g'XYf'\Y]» YghY 'C fh'XYf'9fXY 'VYnY]Wk bYh'k]fX"
C Vk c`\`X]Y 'HYa dYfUhi fYb'fY [Y`a Å»][' () ..7'f%%' ... Ł'YffY]Wk hYbž
k i gghY']Wk ž'XUgg'8 U`c`bUWk 'XYa '6Ygi Wk 'XYg'J i ` _Ubg'9fhU'5`Y`]b
XYf'FY []cb'Y]b 'GdUn]Yf [Ub []a 'Duf_'gY]b'k ØfXY' 'k Ybb'XYf'DUF_
Y]b'Y]b [YghØfnhYf'J i ` _Ub_fUhYf'j c`Yf'gUi fYf'HY]Wk Y' i bX'; Ymg]fY
k ÅfYž []Zh][Y'7\`cf!'i bX'GWk k YZY` [UgY"

8 U`c`Y [h'%%* 'a 'fl , \$'Zh'k'i bhYf'XYa 'A YfYggd]Y [Y`]b'XYf
8 UbU_]!GYb_Y`XYf'5ZUf!F Y []cb']b 'Ÿh\]cd]Yb' i bX']gh'HY]'XYg
C ghUZf]_Ub]gWk Yb'; fUVYbgž'k c'XfY]?cbh]bYbhU'd'UhhYb
Ui gY]bUbXYf [Yf]ggYb'k YfXYb"

U`h1 8U`c`ghY]bYf`XYf`Y]»YghYb`i bX`h]YZghYb`CfhY`XYf
9fXY 25hUg/`6cchg`8U`c`ghY]bYf`XYf`Y]»YghYb`i bX`h]YZghYb
CfhY`XYf`9fXY

8U`c`gY`Vgh]ghY]b`gWk]bXY`YffY[YbXYf` : UfVYb`fUi`gW`ž`XYf
Xi`fW`FY[Yb`i bX`A`YYfk`UggYf`j`cb`XYf`bU`Y`[Y`Y[YbYb`?`ØghY
YfnYi`[h`i bX`Xi`fW`A`U[a`U`Yf`hnh`k`]fX`"8Ug`A`YYfgU`n`fYU[]Yfh
a`]h`j`i`_Ub]gWYb`A`]bYfU`]Yb`]a`A`U[a`U`i bX`YfnYi`[h`Yi`W`hYbXY
: UfVYb`" `b`XYb`Y]»YghYb`Dcc`g`fYU[]YfYb`GWk`YZ`i bX`GU`n`i bX
V]XYb`Y`[Y`VY`GW`cfbghY]bY`" `b`_Ø`YfYb`Dcc`g`a`]gWYb`g]W
?i`dZYfgU`nY`]b`YVYbX][Ya`HØf_]g"

U`h1 GU`n`i bX`j`i`_Ub]gWY`A`]bYfU`]Yb`YfnYi`[Yb`VY]`8U`c`
YVYbX][Y` : UfVYb` 25hUg/`6cchg`GU`n`i bX`j`i`_Ub]gWY
A`]bYfU`]Yb`YfnYi`[Yb`VY]`8U`c`YVYbX][Y` : UfVYb`

6Y]8U`c`U`hY`]W`a`Y]bY`Nk`Y]ZY`" `W`XUW`hY`ž`XUgg`X]Y` : UfVYb`
k`]Y`XUg`Yi`W`hYbXY` ; fØb`XYf`B`cfX`]W`hYf`a`]h`V`c»Ya`5i`[Y
b]W`h`[Ub`n`gc`YVYbX][`YfgWY]bYb`k`ØfXYb`k`]Y`a`]h`XYf`?`Ua`YfU
k`]YXYf`[Y`[YVYb`"

8]Y`Zi`cfYgn]YfYbXYb` ; Y`V`!`i bX`H]YZgYY[fØb`hØbY`k`UfYb`g]W`Yf`]W
Y]bY`≡`i`g]cb`ž`X]Y`j`cb`XYb`[fc»Yb`²`Zbi`b`[Yb`i bX
@Ub`[nY]hVY`]W`hi`b`[Yb`YfZU`fYbYf` : chc`[fUYZb`ni`gUa`a`Yb`[YVfUi`h
k`i`fXYb`"

B]W`h`gc`"5`g`8U`c`Ua`Ui`g[YXØffhYb`<`cf]nc`bh`XYf`8UbU_]`!K`ØghY
]bg`6`]W_ZY`X`Ui`ZhUi`W`h`ž`gY`Y`]W`ž`XUgg`X]Y` : UfVYb`gY`f`YW`h`g]bX`"

9g]gh`_`Uf`ž`XUgg`8U`c`Y]bY`GnYbY`j`cb`Y]bYa`UbXYfYb`D`UbYhYb
gY]b`_Øb`bhY`" `b`XYf`HUh]gh`Yg`VY]`i`bg`Y]bn][Ufh]["K`À`fYbX`Yg
U_h]j`Yb`mXfch`Yfa`U`Yb`NcbYb`k`]Y`M`c`k`ghc`bY`]b`XYb`i`G5
Yhk`Ug`À`b`]W`h`]gh`ž`]gh`Yg`j`]Y`Y]»Yf`i bX`j`]Y`gUi`fYf`"HUhg`ÀW`]W
U`h`XUg`K`UggYf`Y]Yf`Y]bYb`Xi`fW`gW`b]h`h]W`Yb`d`<!K`Yfh`j`cb`\$`ž`&
ZUgh`i`bYffY]W`h`]b`XYf`B`Uhi`f`"

8]Y`<]hnY`]gh`b`U`hØf`]W`gd`ØfVUf`"9g`ghfU`h`b]W`h`bi`f`j`cb`XYf
Gc`bbY`/Yg`n]gW`h`Xi`fW`X]Y`@ØZi`b`[ggW`]hnY`ž`Vfi`hnY`h`]b`XYb`

GWk YZY`dZØhYb`i bX`gW`À[h`a]h`K i W`h`Ui g`XYa `6cXYb``8Yf
; Yfi W`]gh`a UbW`a U`ØVYfk`À`h][YbX`i bX`VYXYW`_h`i bgYfY`?Y`Yb
k]Y`Ghc`Z`

K]f`_`Àa` dZYb`[Y[Yb`X]Y`<]hnY`i bX`XUg`; Ug`i bX`j YfVf]b[Yb`Y]bY
Ghi bXY`XUa]hž`X]Y`GY`Ybgk ØfX][_Y]h`ni `Yf`_i bXYbž`bUhØf`]W
VY[`Y]hYh`j cb`i bgYfYa `: Ø`fYf`<UZh`i `i bX`Y]bYf`nk Y]_ØdZ][Yb
A]]h`ÀfYg`_cfhYž`X]Y`]b`XYf`8UbU_]!GYb`_Y`cV`][Uhc`f]gW`]gh`

A UbW`a U`_b]ghYfh`X]Y`nUfhY`GU`n`_fi ghY`i bhYf`i bgYfYb`: Ø»Yb`i bX
<UZh`i `Xf`Àb[h`i bg`j ca `FUbX`k Y["K ØfXYb`k]f`]b`XUg`%\$\$..7
f&%&... Ł`gUi fY`K UggYf`ZU`Ybž`k`ÀfY`k Yb][`<]`ZY`ni f`<UbX``8Ug
b`ÀW`ghY`?fUb`_Yb`Ui`g`]gh`Ghi bXYb`YbhZYfb`h`]b`A`Y`_Y`Y`

<]Yfž`]b`8U`c`ž`Z`À`h`Yg`b]W`h`gW`k Yfž`Y`h`]cd]Ybg`5bgdfi W`Ui`Z`X]Y
K]Y[Y`XYf`A`YbgW`Y]h`ni`i`[`Ui`VYb``<]Yf`]b`XYf`8UbU_]!
8YdfYgg]cb`YbhXYW`_hYb`K]ggYbgW`UZh`Yf`@`W`hž`XYb`À`hYghYb`i bX
j`c`gh`ÀbX][ghYb`<ca`]b]XYbž`XYf`Ya`U`g`[YZ] bXYb`k`i`fXY`

@`W`h`U`h`i`a`ZUb[fY]W`Y`: cfgW`i`b[Yb`i`bX`HYghg`ØVYf`g]W
Yf[Y`Yb`U`ggYbž`UVYf`Y]Yf`VY]`8U`c`VfUi`W`h`a`Ub`_Ui`a`6Yk`Y]gY
ZØf`Y`fY`9I`]ghYbn``K`Ybb`a`Ub`g]W`]ba`]hYb`X]YgYf`a`mgh]gW`Yb
I`fk`Y`h`VYZ]bXYhž`gW`Y]bh`Yg`Xi`fW`Ui`g`a`UW`VUfž`XUgg`b]W`h`bi`f
XYf`HcXž`gcbXYfb`Ui`W`XUg`@VYb`gY`Vgh`Ui`g`XYb`H]YZYb`j`cb
8U`c`Ui`ZghY][Yb`_Øbb`h`Y`

GY`Ybgk ØfX][_Y]hYb`i bX`GnYbYb`fi bX`i a
8U`c`

8]Y`Yb][Ybž`X]Y`bUW`i`8U`c`ZU`fYbž`gc`hYb`g]W`XUfØVYf`]a`?`UfYb
gY]bž`XUgg`Yg`Y]bY`HU[YgZU`fh`j`cb`9fhU`5`Y`YbhZYfb`h`]gh`K`]f
Vi`W`hYb`Y]bY`!h`À[][Y`Hci`f`a`]h`&`B`ÀW`hYb`i`bX`j`YfVfUW`hYb`XYb
YfghYb`HU[`]b`9fhU`5`Yž`XYb`nk`Y]hYb`HU[`a`]h`XYf`: U`fh`bUW`i`8U`c`
i`bX`XYb`Xf]hYb`HU[`a`]h`XYf`9f`_i`bXi`b[`j`cb`8U`c`i`bX`XYb
i`a`]Y[YbXYb`GY`Ybgk ØfX][_Y]hYb`

8Ug`gc``b]W`h`Y]»Ybž`XUgg`XYf`nk`Y]hY`HU[`NY]h`j`YfgW`k`YbXi`b[
]gh`K`]f`Y`hYb`Ub`XYb`GU`ngYb`XYg`5gU`Y!GYg`i`bX`

VYcVUWxhYhYb`Ui » Yf[Yk Ò\h`]WXY`GnYbYb`j cb`?Ua Y`Ybž`X]Y`ØVYf
X]Y`GU`nghfU» Y`[YZØ\fh`k i fXYb"

BUW`8U`c`Yf_i bXYhYb`k]f` 6Yf[Y ž`X]Y`Xi fW`GU`nj cf_ca a Yb
YbhghUbXYb`g]bXž`Y]b`GU`nVYf[k Yf_ž`XUg`j cb`5ZUf!@Yi hYb
VYa Ubh`k i fXYž`Ò][Y`gdfi XY`bXY`GYb`i bX`i Zhgd]Y[Y`bXY
; Yk ÀggYfž`X]Y`Ui g`F]ggYb`]b`XYf`9fXY`Ui ZhUi W`hYb` `U`Yg`Y]b
k ØfX][Yf`6cbi g`ZØf`8U`c`gY`Vgh"

- `U`h1 `?Ua Y`Y`Ui ZXYf`GU`nfci hY` 2
- `U`h1 `GU`]bYb`XYg`5gU`YgYYg` 2
- `U`h1 `GcbbYbi bhYf[Ub[`ØVYf`XYb`GU`]bYb`XYg
5gU`YgYYg` 2
- `U`h1 `GU`nVYf[Y` 2
- `U`h1 `: cfa Uh]cbYb`j cb`GU`nVYf[Yb` 2
- `U`h1 ` 2

5h`Ug`/`6cchg

8U`c`. `8Ug`K`YgYbh`]WXY

K`Ug.`6Ygi`W`j`cb`8U`c`]b`Y`h`]cd]Yb`]a`F`U`a`Yb`Y]bYf`&!hÀ[] [Ybž
`!hÀ[] [Yb`Hci`f`Xi`fW`X]Y`8UbU_]!GYb`_Y"

K`c.`I`bgYfY`Hci`f`Xi`fW`X]Y`8UbU_]!8YdfYgg]cb`k`Uf`a`]h`Y]bYa
5i`ZYbh`U`h`]b`XYf`K`i`_fc`@cX[Y`]b`XYf`GhUXh`K`i`_fc`[YVi`W`h`
8]YgY`[Ya`Øh`]WXY`^2`_c!@cX[Y`bi`mh`Gc`UfYbYf[]Y`i`bX`V]YhYh`Y]b
hfUX]h]cbY`Y`g`8Y`_cf`i`bX`Y]bY`Y`fj`cffU[YbXY`5i`gg]W`h`Ui`ZX]Y
i`a`Y]Y[YbXYb`<Ø[Y`"9g`[]Vh`_cghYb`cgYg`K`@5B`]b`XYb
ÒZZYbh`]WXYb`6YfY]WXYbž`Y]bY`6Uf`i`bX`Y]b`FYghUi`fUbhj`cf`C`fh`i`bX
ni`a`NY]hdi`b`_h`XYg`GW`fY]VYbg`Y]bYb`Dcc`]a`6Ui`"

- `U`h1 ` 2

- 'U`h1 2
- 'U`h1 2
- 'U`h1 2
- 'U`h1 2
- 'U`h1 2
- 'U`h1 2
- 'U`h1 2

5h`Ug' / '6cchg

8]Y`i bhYf_i bZi`Ui Z`XYf`Hci f`Xi fW\`X]Y`8 UbU_]!GYb_Y`gY`Vgh]gh
 Ai » Yfgh`Y]bZUW\`"6Y]`9fhU`5`Y`fYfghY`B UW\ hĕ`nY`hYhYb`k]f`Ui Z
 XØbbYb`A UhfUhnYb`]b`Y]bYf`GhY]b\ØhY`"ĕ`XYf`nk Y]hYb`B UW\ h
 gW\`]YZYb`k]f`i bhYf`XYb`GhYfbYb`Ui Z`dfcj]gcf]gW\Yb`<c`nVYhhYb`"

K]f`Ya dZY`\`Yb`ĀbYbž`ĀfYb`Y][YbYb`GW\`UZgUW`_Y]bni dUW`_Yb`"
 K Ā\fYbX`X]Y` ; Y[YbX`ZØf`ghY][YbXY`HYa dYfUhi fYb`VY`_Ubbh`]ghž
 k YfXYb`X]Y`B ĀW\ hY`k]bX]["6YUW\ hYb`G]Yž`XUgg`Yg`_Y]bY
 ?ca`a`cXY`[]Vhž`U`gc`a`ØggYb`G]Y`VYei`Ya`Y]bYb`K`Y`[]Y\Ybž`i`a
 XYa`Fi`Z`XYf`B`Uhi`f`ni`Zc`[Yb`"

K`Ubb.`8]Y`VYghY`F`Y]gYnY]h`ZØf`8`U`c``]gh`nk]gW\Yb`C`_hcVYf`i`bX
 : YVfi`Ufž`k`Ybb`X]Y`ghY][YbXYb`HYa`dYfUhi`fYb`Ua`YfhfĀ[`]W\ghYb
 g]bX`"

K]Y.`K]f`VYgi`W\hYb`8`U`c``a`]h`Ga`]`b[]9h\]cd]Už`X]Y`j`cb`@cbY`m
 D`UbYh`9h\]cd]U`Ya`dZc`\`Yb`k`YfXYb`"K]f`VY]XY`k`i`fXYb`j`cb`Y]bYa
 Yb[`]gW\gd`fUW\][Yb`: Ø\`fYfž`nk`Y]: U\`fYfbž`nk`Y]?`ØW\Yb`i`bX`Y]bYf
 nk`Y]_ØdZ][Yb`A`]hĀ`fYg`_cfhY`VY[`]Y]hYhž`X]Y`]b`nk`Y]
 (³`(!: U\`fnYi`[Yb`hf`Ubgdcfh]Yfh`k`i`fXYb`"

8]Y`Hci`f`k`Uf`[i`h`cf[Ub]g]Yfhi`bX`gc`_ca`ZcfhUVY`ž`k]Y`Yg
 Ub[Yg]W\hg`XYf`Z`Y\`YbXYb`ni`[fi`bXY`"]Y[YbXYb`ĕ`ZfUghfi`_hi`f`]b
 XYf`; Y[YbX`a`Ø[`]W\`k`Uf`"fK]f`Ya`dZY`\`Ybž`Y]bY`\`Y`Y`Gh]fb`Ua`dYž
 Y]bYb`GW\`UZgUW`_ž`HUgW\Yb`hØW\Yf`#`Yi`W\hØW\Yf`i`bX`Y]b
 Ubh]VU`_hYf]Y`Y`Yg`; Y`Y]bni`dUW`_Yb`ĕ`i`bgYfY`; Y`ĀbXYk`U[Yb`k`UfYb
 fcVi`gh`i`bX`ghUf`_ž`i`bX`XUb`_i`bgYfYg`hU`Ybh]YfhYb`?cW\g`M]XbU`_
 i`bX`gY]bYg`5gg]ghYb`hYb`\UVYb`k]f`gY\`f`[i`h`[Y[YggYb`"

K]f'nU\`hYb' '\$\$! G8`dfc`DYfgcb`Z0f`Y]bY'' !hÅ[][Y`Hci f'a]h&
BÀW hYb`i bX`9fhU`5`Yž`8U`c`i bX`XYb`GU`nYVYbYb`XYg`5gU`Y!
GYYg" `9g`]gh`hYi Yfž`UVYf`XUg` ; Y`X`k Yfh" `9]bY`Yfk Y]hYfhY`Hci f'a]h`
BÀW hYb`i bX`(`HU[Yb`_c`ghYh`(\$\$`~`dfc`DYfgcb" `6i W\Yb`G]Y`ØVYf
A i`i [YhU` ; YVfY\`]k ch`ga]]b[Yh\]cd]UhfUj Y`"Wca ž
ga]]b[Yh\]cd]UhfUj Y`4 mU\cc"Wca žf&) %!%Ł%) \$* - ("

G_mVi gi bX`GY`Ua`VYhfY]VYb`_ca ZcfhUV`Y`6i ggY`nk]gW\Yb`5XX]g
5VYVU`i bX`A Y`_Y`Yž`XYa`5i g[Ub[gdi b`h`Z0f`8 UbU_]!Hci fYb"
K Ybb`G]Y`g]W\`Z0f`X]Y`K i`_fc`@X[Y`YbhgW\Y]XYbž`_ØbbYb`G]Y`j ca
6i gVU\`b`cZA Y`_Y`Y`Y]bYb`_c`U`Yb`6i g`bUW\`K i`_fc`bY\`a Yb`f%)
9H6`#`\$ž) ! G8`dfc`DYfgcb`/(`,`_a Łi bX`XUbb`Y]b`Hi`_`Hi`_ni f
6Ug]g`bY\`a Yb" `8]Y`@X[Y`]gh`Y]b` : ØbZA]bi hYb!Hfc`h`VYf[Ui Z`

⊕`UbXgZ0[Y`g]bX`X]Y`gW\`bY`ghY`5fhž]b`Y`h\]cd]Yb`ni`fY]gYb
fØVYfdfØZYb`G]Y`X]Y`bYi YghYb`Fci hYb`\]YfŁ" `9g`]ghj]Y`V]`][Yfž
: `Ø[Y`]b`Y]bYa`6Øfc`j cb`9h\]cd]Ub`5]f`]bYg]a`@UbX`ni`Vi W\Yb"
; YVYb`G]Y`i bVYX]b[h`Ubž`cV`G]Y`]bhYfbUh]cbU`a]h]\`bYb`[YZc[Yb
g]bXž`XU`G]Y`5bgdfi W\`Ui ZY]bYb`Yf\`YV`]W\Yb`F UVUhh`\ UVYb"

5XX]g`5VYVU`]gh`XYf`k]W\h][ghY`]bhYfbUh]cbU`Y` :`i [\UZyb`XYg
@UbXYg" `6i W\Yb`G]Y`]bhYfbUh]cbU`Y` :`Ø[Y`ØVYf`g`mgWUbbYf"bYh"

`U`h1 2

@cbY`m`D`UbYh`9h\]cd]U`]gh`Y]b`i a ZUggYbXYf`F`Y]gYZ0\`fYf`Z0f`XUg
@UbXž]XYU`Z0f`X]Y`Yb][Ybž`X]Y`gck c\`X]Y`k]W\h][ghYb
GY\`Yb`gk ØfX][_Y]hYb`Yf`i bXYb`U`g`Ui W\`k Yb][Yf`VYZU\`fYbY
GhfU» Yb`bY\`a Yb`a ØW\`hYb" `K Ybb`Xi`Y`g`j`cfn]Y\`ghž]b`Y]bYf`Hci f
ni`fY]gYbž`Ya dZY\`Yb`k]f` ;`5Xj`Yb`hi`fYg`i bX`]\`fY`Y`h\]cd]Yb!
Hci fYb`]b`_Y]bYb` ; fi ddYb"

@Y]hV]`X.`5h`Ug`/`6c`chg

6Ygi W\Yb`G]Y`i bg`Ui Z.`Y]bY!fY]gY"XY