

F ØW_V`]W_`Ui Z`X]Y`K YbXY. `K]Y`X]Y`9]b\Y]h
@YVYb`j YfÅbXYfhY

8]Y`9]bZØ\fi b[`XYf`8!A Uf_`%- - \$`j YfÅbXYfhY`XUg`@YVYb`XYf`
88F!6Øf[Yf`[fi bX`Y[YbX`": Y]Yfbž`7\UbW`b`i bX`F ØW_V`]W_Y`
Ui Z`X]Y`9]b\Y]h"

þ`XYf`B UW`h`XYg`%"`ž` `]`%- - \$`[YgW`U\`Yhk Ugž`XUg`X]Y`; YgW`]W`hY`
8Yi hgW``UbXg`bUW`\U`h][`dfÅ[hY`"5`g`X]Y`K Y`hnY]hi` \f`a`]h`Y]bYa`
`Ui`hYb`; `cW_Y`bgW`U[`]`YbUi`A`]hYfbUW`h`Ub`nY][`hYž`VfUW``Ui`Z`
XYa`5`Yi`UbXYfd`Um`]b`6Yf`]b`Y]b`:`Ygh`Ui`g`"HUi`gYbXY`A`YbgW`Yb`
↑`VY`hYb`i`bX`ZY]YfhYb`X]Y`9]bZØ\fi b[`XYf`8!A Uf_`]b`XYf`
Y\Ya`U`][`Yb`88F`"8]YgYf`A`ca`Yb`h`gma`Vc`]g]YfhY`b]W`h`bi`f`XYb`
Z]bUb`n]Y`Yb`i`a`Vfi`W`ž`gcbXYfb`Ui`W`Y]bYb`h]YZ[fY]ZYbXYb`K`UbXY`
]b`XYf`@YVYb`gfYU`]h`h`XYf`A`YbgW`Yb`ž`X]Y`]b`XYf`88F`[`fc`»
[`Yk`cfXYb`k`UfYb`"

8]Y`:`fYi`XY`ØVYf`X]Y`9]bZØ\fi b[`XYf`8!A Uf_`k`Uf`5i`gXfi`W_Y]bYf`
bYi`Yb`<c`Zbi`b[`i`bX`XYf`A`Ø[`]W_Y]hž`X]Y`Y][`YbYb`
@YVYbgi`a`ghÅbXY`[`fi`bX`Y[`YbX`ni`j`YfÅbXYfb`"D`Øm`]W`ghUbX`XYb`
6Øf[`Yfb`XYf`88F`Y]b`@YVYb`gk`Y[`c`ZYbž`XYf`ni`j`cf`]b`Y]bYf`
D`Ub`k`]fhgW`UZh`b]W`h`XYb`_VUf`[`Yk`YgYb`k`ÅfY`"i`bhYf`XYb`
:`Y]YfbXYb`VYZUbXYb`g]W`j`j`Y`Yž`X]Y`[`YfUXY`]`fY`gW`i`]gW`Y`
5i`gV]`Xi`b[`UV[`YgW`cggYb`UhhYb`i`bX`bi`b`j`cf`XYf`:`fU[`Y`
ghUbXYb.`K`Ug`_ca`a`h`U`g`B`ÅW`ghYg3`8]Y`5b`hk`cf`h`k`Uf`j`j`Y`Z`Å`h][`"

9]b`@YVYb`]b`:`fY]`Y]h`i`bX`
K`U`\`a`Ø[`]W_Y]hYb`

:`Øf`X]Y`XUa`U`][`Yb`ž`[`YbX`]W`Yb`i`bX`↑`b[`Yb`9fk`UW`gYbYb`
YfØZbYhY`g]W`Y]bY`K`Y`h`XYf`A`Ø[`]W_Y]hYb`"5bghUhh]b`ghUffYb`
6Yfi`ZgZY`XYfb`i`bX`5i`gV]`Xi`b[`gd`ÅbYb`ni`j`Yf`UffYbž`_cbbhYb`g]Y`

bi b'6Yfi ZY'Yf'YfbYbž'X]Y']\fYb' b hYfYggYb'i bX'@Y]XYbgW UZhYb
YbhgdUWXYb"8]Y'6Y[f]ZYZ' I a ni ['j]b'XYb'K YghYb' cXYf
Ghi X]i a 'ja'5i g'UbX' hfi [Yb'UV'gcZcfh'Y]bYb'[Ubn'bYi Yb'?`Ub["
9g'k Uf'Y]bY'NY[hž']b'XYf'Yg'b]W hg' l b[Yk Ò\ b`]W Yg'k Ufž'bYi Y
K Y[Y'ni' [Y\Yb'i bX'g]W' j cb'XYf'<Y]a Uh'ni'X]ghUbn]YfYbž'i a']b
GhÅXhYb'k]Y'<Ua Vi f['cXYf'A ØbWXYb': i »'ni'ZUggYb"

' ('ſ\ fY' bUW' X]YgYb'\]ghcf]gWXYb'9fY][b]ggYbž'U'g'Ua' ' "'C_hcVYf
X]Y': Y]Yf'W' _Y]hYb'ni f'8Yi hgWXYb'9]b\Y]h]b'GW'k Yf]b
ghUhhZ]bXYbž'ZfU[h]g]W'gc'a UbWYf. 'K Ug'VYXYi hYh'X]Y'9]b\Y]h'ZØf
a]W'3'J]Y'Y'A YbgWXYbž'X]Y'ni f'XUa U'] [Yb'NY]h'† b[Y'9fk UW'gYbY
k UfYbž'hY]Yb'g]W' \Yi hY']b'Y]bY'J]Y'nU'\`j cb'; YgW]W'hYb'Y]b"
9]b][Y'ZØ[hYb'g]W'YfZc`[fY]W']b'XUg'bYi Y'GmghYa' Y]bž'k Å\ fYbX
UbXYfY'j cb'9bhhÅi gW'i b[Yb'i bX' [YgWY]hYfhYb'@VYbYgd'ÅbYb
VYf]W'hYhYb"

8]Y'K YbXY'\Uh']bXYg'b]W'h'bi f'A YbgWXYb'ni f'5Vk UbXYfi b[
VYk c[Ybž'gcbXYfb'Ui W' bYi Y'@VYbYgUfhYb']b'ghfi _hi fgW'k UWXYb
FY[]cbYb'k]Y'A YW_YbVi f['cXYf'J cfdca a Yfb'[YgW UZZYb"9]bY
J]Y'nU'\`j cb'Ni n]Y\YbXYb'\Uh'X]Y'V]g\Yf][Yb'J Yf\Å'hb]ggY
j YfÅbXYfhi bX'Xi fW']\fY'BYi []Yf'i bX'9fbYi Yfi b[gXfUb['X]Y
fY[]cbU'Yb'; Ya Y]bgW UZhYb'VYfY]W'Yfh"8]YgY'; YgW]W'hYb
YfnÅ\Yb'b]W'h'bi f'j cb'<YfUi gZcfXYfi b[Ybž'gcbXYfb'Ui W' j cb
Y]bYa']a a YfZcfh'ni bY\ a YbXYb'Ni gUa a Ybk UW'gYb'i bX'j cb
Y]bYa' ghÅbX][Yb'8]U'c['nk]gWXYb'XYb'i bhYfgW]YX`]WXYb
@VYbYgfYU`]hÅhYb"

⇒ fY'9fZU\ fi b [Yb']b hYfYgg]YfYb'i bg

ſ'hnh]g]bX'X]Y'@YgYf'Y]b[Y'UXYbž']\fY'Y][YbYb'; YgW]W'hYb'i bX
9fZU\ fi b[Yb'ni' hY]Yb"K]Y'\Uh'X]Y'K YbXY'⇒f'@VYb'VYY]bZi ggh3
K Uf'⇒fY'9bhgWY]Xi b[ž'Zcfh'ni n]Y\Ybž'j cb'<cZbi b['cXYf'j cb'XYf
Bch'k YbX][_Y]h[YdfÅ[h3'?Y\fhYb'G]Y'ni fØW_ž'i bX'k Ybb'Už'k Ug
\Uh'G]Y'XUni'VYk Y[h3'8]Y'J]Y'ZU'h'X]YgYf'9f'YVb]ggY' []Vh'Y]bYb
gdUbbYbXYb'9]bV']W_]b'X]Y'i bhYfgW]YX`]WXYb'DYfgdY_h]j Ybž'X]Y
a]h'XYf'K]YXYfj YfY]b][i b['j YfVi bXYb'g]bX"

Dcgh]g]bX'k]`_ca a Yb'i bhYf'XYf'Ub[Y[YVYbYb'9!A U]!5XfYggYž

i a `X]YgY`k Yfhj c`Yb` ; YgW]W]hYb`ni `Xc_i a Ybh]YfYb`i bX`XUa]h
Y]b`k Y]hYfYg`GhØW`NY]h[YgW]W]hY`ZYghni \U`hYbž`XUg`nY][hž`k]Y
g]W]X]Y` ; YgW]W]Y`XYf`A YbgW]Yb`Xi fW]` \]ghcf]gW]Y
K YbXYdi b_hY`bYi`XYZ]b]YfYb`_ØbbYb`"

F YZ`YI]cb`ØVYf`7\ UbW]b`i bX
< YfUi gZcfXYfi b[Yb

8]YgY`F ØW_V`]W]Y`j YfXYi h]W]Ybž`XUgg`X]Y`XYi hgW]Y
K]YXYfj YfY]b][i b[`b]W]h`bi f`dc`]h]gW]Yž`gcbXYfb`Ui W
h]YZ[fY]ZYbXY`gcn]U`Y`I a k Å`ni b[Yb`a]h]g]W]VfUW]hY`"8]Y` : fU[Yž
k]Y`Yg`g]W]UbZØ`hž`]a`G]W]UhhYb`XYf`A Ui Yf`Ui Z[Yk UW]gYb`ni
gY]b`i bX`d`Øh`]W]`b`Y]bYf`j Ø`][`bYi Yb` ; YgY`gW]UZhi`ni`YVYbž
V`Y]Vh`fY`Yj Ubh`"8]Y`A Ø[`]W]_Y]hž`ØVYf`XYb`Y][YbYb`<cf]ncbh
\]bUi gni gW]Ui Ybž`]gh`Yi hY`k]W]h][Yf`XYbb`Y`"G]Y`\YVh`\Yfj cfž
k]Y`ZØf`j]Y`Y`A YbgW]Yb`XYf`K i bgW]`bUW]`Y]bYa`YfZØ`hYb`@YVYb
i bhYb`bVUf`a]h`XYf` : fY]\Y]h]j YfVi bXYb`]ghž`Y][YbY
9bhgW]Y]Xi b[Yb`ni`hfYZZYb`"

8]Y`9]bZØ\fi b[`XYf`8!A Uf_`]b`XYf`88F`ghY`hY`Y]bYb`\]ghcf]gW]Yb
K YbXYdi b_h`XUfž`XYf`k Y]hfY]W]YbXY`gcn]U`Y`ž`k]fhgW]UZhi]W]Y`i bX
dc`]h]gW]Y` : c[`Yb`a]h]g]W]VfUW]hY`"8Ug`5i ZY]bUbXYfhfYZZYb`j cb
nk Y][fi bX`Y[YbX`i bhYfgW]YX`]W]Yb`GmghYa Ybž`XYf
A Uf_hk]fhgW]UZhi]a`K YghYb`i bX`XYf`D`UbK]fhgW]UZhi]a`C ghYbž
gW]i Z`Y]bY`XmbUa]gW]Yž`UVYf`Ui W]`_cbZ]_hfY]W]Y`F YU`]hÅh`"J]Y`Y
A YbgW]Yb`]b`XYf`88F`k UfYb`Ui ZY]bYb`d`Øh`]W]Yb`K UbXY`b]W]h
j cfVYfY]hYhi`bX`gU\Yb`g]W]`b`XYf`bYi Yb`A Uf_hk]fhgW]UZhi]a`]h
< YfUi gZcfXYfi b[Yb`_cbZfcbh]Yfhž`X]Y`]\bYb`j cf\Yf`ZfYa`X`k UfYb`"
8Uni`[Y\ØfYb`i bhYf`UbXYfYa`XYf`K UbXY`j cb`XYf
; Yk Å`f`Y]ghi b[gk]fhgW]UZhi`ni`Y]bYf`K YhhVYk YfVgk]fhgW]UZhiž`X]Y
Bchk YbX][_Y]h`ni`f`GY`Vghj Yfk]f_]W]i b[`i bX`X]Y`Gi W]Y`bUW]
⇒Ybh]hÅh`]b`Y]bYa`j YfÅbXYfhYb`[YgY`gW]UZhi]W]Yb`?cbhYI h`"

8]Y`HfUbgZcfa Uh]cbž`X]Y`a]h`XYf`K YbXY`Y]b\Yf[]b[ž`VYhfUZ`b]W]h
bi f`X]Y`k]fhgW]UZhi]W]Yb`Ghfi _hi`fYbž`gcbXYfb`Ui W]`X]Y
dYfgØb`]W]Y`@YVYb]gg]hi Uh]cb`j]Y`Yf`A YbgW]Yb`"5`hY
K Yfhj cfghY`i b[Yb`[Yf]YhYb`]bg`K Ub`_Ybž`k Å`fYbX`bYi Y`7\UbW]b
i bX`A Ø[`]W]_Y]hYb`]b`XYf`bi b]j YfY]b`hYb` ; YgY`gW]UZhi`[YgW]UZZYb

k i fXYb": Øf'j]Y`Y`k UfYb`X]Y`9fZU\fi b[Yb`X]YgYf`NY]h`dFÅ[YbXž
gck c\`ja`dcg]h]j Yb`U`g`Ui W`ja`bY[Uh]j Yb`G]bbY""8]YgY`NY]h`\Uh
XUg`6Yk i ggghY]b`i bX`X]Y`@YVYbgfYU`hÅhj cb`A]`cbYb`j cb
A YbgW`Yb`bUW`U`h][`VYY]bZi ggh"

Gcn]U`Y`i bX`k]fhgW`UZh`]W`Y`J Yf`AbXYfi b[Yb

8Yf`K YW`gY`ni f`8!A Uf`_\`UhhY`b]W`h`bi f`5i gk]f`_i b[Yb`Ui Z`X]Y
K Å\fi b[ž`gcbXYfb`_i fVY`hY`Ui W`h]YZ[fY]ZYbXY`k]fhgW`UZh`]W`Y
I a ghfi _hi f]Yfi b[Yb`Ub""8Yf`I a gh]Y[`Ui ZY]bY`a Uf`_hcf]Ybh]YfhY
K]fhgW`UZh`VfUW`hY`ni a`6Y]gd]Y`XYb`5VVUi`nU`\fY]W`Yf
5fVY]hgd`ÅhnY`]b`XYf`Y\Ya U`][Yb`88Fž`XU`j]Y`Y`I bhYfbY`a Yb
b]W`h`k YhhVYk YfVgZÅ\][`k UfYb""9]b`6Y]gd]Y`XUZØf`]gh`X]Y`Y]bgh
V`Ø\YbXY`A UgW`]bYbVUi]bXi ghf]Yž`X]Y`Xi fW`X]Y`?cb`_i ffYbn`]a
K YghYb`Yf\YV`]W`i bhYf`8fi W`_[Yf]Yh""8]Y`5fVY]hg`cg][`_Y]h]gh]Y[
gdfi b[\UZh`Ubž`k Ug`j]Y`Y`A YbgW`Yb`]b`YI]ghYbn]Y`Y`?f]gYb
ghØfnhY"

5i ZXYf`UbXYfYb`GY]hY`YfØZbYhY`g]W`Y`]bY`J]Y`nU`\`bYi Yf
A Ø[`]W`_Y]hYb""8Yf`Ni [Ub[`ni`k Ygh]W`Yb`K UfYbž
8]Ybgh`Y]ghi b[Yb`i bX`6]`Xi b[gUb[YVchYb`a UW`hY`X]Y`bYi Y
FYU`]hÅh`UhhfU`_h]j`ZØf`j]Y`Y""8]Yg`ZØ\fhY`Ui W`ni f`5V`k UbXYfi b[
j cb`A YbgW`Yb`ž`X]Y`bUW`VYggYfYb`DYfgdY`_h]j Yb`]a`K YghYb
gi W`hYb""Ghi X]Yb`nY][Ybž`XUgg`]b`XYb`YfghYb`J\YfYb`bUW`XYf
K YbXY`j]Y`Y`↑ b[Y`A YbgW`Yb`Ui g`XYf`88F`]b`XYb`K YghYb
[]b[Ybž`Ui ZXYf`Gi W`Y`bUW`5fVY]hgd`ÅhnYb`i bX`Y]bYa`VYggYfYb
@YVYb"

F YZ`YI]cb`ØVYf`X]Y`XYi hgW`Y`9]b`Y]h

8]Y`K]YXYfj YfY]b][i b[`8Yi hgW`UbXg`i bX`X]Y`XUa`]hj YfVi bXYbY
9]b`Y]h`k Uf`i bX`]ghY]b`H\Ya Už`XUg`j]Y`Y`9a`ch]cbYb`k YW`_h""9]b
VYXYi hYbXYf`HY]`XYf`6Yj Ø`_Yfi b[`VYhfUW`hYh`X]Y`9]b`Y]h`U`g
9fZc`[g[YgW`]W`hYž`X]Y`bYi Y`7\UbW`b`i bX`A Ø[`]W`_Y]hYb`Vch"
5`YfX]b[g`[]Vh`Yg`Ui W`_f]h]gW`Y`Gh]a`a Ybž`X]Y`Ui Z`X]Y
Ub`U`hYbXYb`i bhYfgW`]YXY`nk]gW`Yb`Cgh`i bX`K YghXYi hgW`UbX
\]bk Y]gYb""6YbW`a Uf`!Ghi X]Yb`XYg`GhUh]gh]gW`Yb`6i bXYgUa`hYg
VY`Y[Ybž`XUgg`hfc`hn`Y]bYf`J]Y`nU`\`j cb`:`cfhgW`f]hhYbž`]b`6YfY]W`Yb

k]Y'9]b_ca a Yb'i bX'5fVY]hga Uf_hž'X]Y'8]g_fYdUbn'k Y]hYf\]b
gdØfVUf']gh"

9]b'k Y]hYfYg'k]W h][Yg'9'Ya Ybh']gh'X]Y' ðYbh]hÅh" J]Y'Y'A YbgW Yb
ZØ\`Yb'g]W\`Yhnhž'a Y\`f'XYbb'Yž'gck c\`U`g`C gh!`U`g`Ui W\`U`g
K YghXYi hgW Y'i bX`_Åa dZYb'XUfi a žY]b' [Ya Y]bgUa Yg
; YgW]W hgj YfghÅbXb]g'ni `Ybhk]W_Y`b"8]YgY'8]g_i fgY'ØVYf
ðYbh]hÅh'i bX`Ni [Y\`Øf][_Y]h'g]bX`b]W h'bi f'k]W h][`ZØf`X]Y
dYfgØb`]W Y`FYZY_h]cbž'gcbXYfb`Ui W\`ZØf`X]Y
[YgUa h[YgY`gW UZh]W Y`9bhk]W`i b[`8Yi hgW `UbXg"

8YhU]`g

6Ygi W Yb`G]Y`i bg`Ui Z.`a Y]b!VYf`]b"bYh