

@]j '@]gU': f]Yg'Yf\Ä'h'9\fi b['VY]a
:]`a ZYgh]j U` '@i Xk][g\ UZYb

@]j '@]gU': f]Ygž'VY_Ubbh'Ui g' ei ch/6UVm'cb'6Yf`]b/ ei chž
k i fXY'VY]a ' :]`a ZYgh]j U` '@i Xk][g\ UZYb'ZØf`]\fY
\YfUi gfU[YbXY'GW\Ui gd]Y`_i bgh'Ui g[YnY]W\ bYh"



5a ' : fY]hU[UVYbX'k i fXY '@]j '@]gU': f]Ygž'VY_Ubbh'Ui g'XYf
9fZc`[ggYf]Y' 6UVm'cb'6Yf`]b ž]a 'FU\ a Yb'XYg:]`a ZYgh]j U`g
@i Xk][g\ UZYb'ZØf`]\fY'\YfUi gfU[YbXY'GW\Ui gd]Y`_i bgh
Ui g[YnY]W\ bYh" ÆfY'F c`Y'U`g'7\Uf'chY'F]hYžX]Y'g]W\]b'XYf
Ui ZFY[YbXYb'i bX'ni [`Y]W\ '[YZÄ\ f`]W\Yb'6Yf`]bYf'i bhYfk Y'h'XYf
%- &\$Yf' ð\ fY'VYk Y[hž\ Uh'b]W\ h'bi f'X]Y'Ni gW\Ui Yfž'gcbXYfb'Ui W
X]Y' ?f]h]_Yf`]b'XYb'6Ubb'[Ync[Yb"

8]Y'ZØbZhY'GhUZZY`j cb' 6UVm'cb'6Yf`]b `Äi Zh'U_hi Y`'i bX'\Uh
VYfY]hg'nU\`fY]W\Y'DfY]gY'Y]b[YVfUW\h : f]Yg'k i fXY'i bhYf
UbXYfYa 'a]h'XYa ' ; f]a a Y!DfY]g'i bX'XYa '8Yi hgW\Yb
GW\Ui gd]Y'dfY]g'Ui g[YnY]W\ bYh"K Ä\ fYbX'XYf'DfY]gj Yf'Y]\i b['Ub
X]YgYa 'VYgcbXYfYb'5VYbX'`cVhY'XYf': Ygh]j U`Y]hYf'A]W\UY`'? Öhn

]\fY`U_f]V]gWXY`JcfVYfY]hi b[`Z0f`X]Y`F c`Y"9f`VYhcbhYž`k]Y`gY\`f
g]Y`g]WXY`]b`X]Y`A UhYf]Y`Y]b[YUfVY]hYh`\Uh`g]Y`YfbhY`i bhYf
UbXYfYa`XYb`7\Uf`Yghcbž`Ug`K Yf_Y`XYf`nY]h[Yb`0gg]gWXYb
5i hcf]b`fa [UfX`?Yi b`i bX`hUi W`hY`]b`XUg`@VYb`j cb`A Uf`YbY
8]Yhf]WXY`]b"

J c f g h Y `` i b [` X Y g :] ` a g ` = b ` @] Y V Y ž ` 9 i f Y ` <] ` X Y

=a`5bgWXY`i gg`Ub`X]Y`9\fi b[`k i fXY`]\f`bYi YghYf`:]`a` ` =b`@]YVYž`
9i fY`<]`XY` `dfÅgYbh]Yfh"8Uf]b`gd]Y`h: f]Yg`X]Y`hfU[]gWXY`:] [i f`XYf
<]`XY`7cdd]ž`X]Y`A]h[`]YX`XYf`K]XYfghUbXg[fi ddY` F chY`?UdY`Y
k]fX"8]Y`; YgWXY`W`hYž`X]Y`]a`8Yi hgWXY`UbX`XYf`%- (\$Yf`U\`fY
Ub[Yg]YXY`h]ghž`VYgWXYfY]Vhž`k]Y`<]`XY`i bX`]\f`A Ubbž`XYf`YVYbZU`g
HY`XYf`; fi ddY`]ghž`j Yf\UZhYh`k YfXYb" =b`Y]bYa` : fUi Yb[YZÅb[b]g
]b`6Yf`]b`Vf]b[h]g]Y`]\fYb`Gc`b`ni f`K Y`hž`ghY`h`YXcWXY`_i fn`XUfUi Z
j cf`XYa`HcXY`j Yfi fhY`h"

8]YgYg`Y]bXfi W_gj c`Y`K Yf`_nY][h`b]WXY`h`bi f`X]Y`gWXY`Ui gd]Y`Yf]gWXY`
6UbXVfY]hY`j cb`: f]Ygž`gcbXYfb`VY`Yi W`hYh`Ui W`X]Y`F c`Y`j cb
: fUi Yb`]a`K]XYfghUbX`k Å\`fYbX`Y]bYf`Xi b`_Yb`NY]h`]b`XYf
XYi hgWXY`b`; YgWXY`W`hY"9g`]gh`Y]b`:]`a`ž`XYf`ni a`B UWXYb`_Yb
UbfY[hž`]bgVYgcbXYfY`ØVYf`X]Y`A i hi bX`XYb`?Ua`dZXYf
A YbgWXYbž`X]Y`g]WXY` [Y[Yb`Y]b`i bhYfXfØW`_YbXYg`F Y[]a`Y`ghY`hYb"

8 Ug`:]`a`ZYgh]j U`@`Xk][g\UZYbž`XUg`]b`X]YgYa` `U\`f`VYfY]hg`gY]bY
&\$"5i g[UVY`ZY]Yfhž`\Uh`g]WXY`U`g`Y]bY`VYXYi hYbXY`D`UhhZcfa`Z0f
XYi hgWXY`:]`a`Y`YhUV`]Yfh`BYVYb`XYf`5i X]h]j Yb`K ØfX][i b[`XYf
VYghY`YbXYb`GWXY`Ui gd]Y`_i bgh`k YfXYb`Ui W`k`Y]hYfY`DfY]gY
j Yf`]Y`Ybž`XUfi bhYf`X]Y`dfYgh][YhfÅWXYh][Yb`Bca`]b]Yfi b[Yb`Z0f
XYb`:]`a`_i bghdfY]g`i bX`XYb`Di V`_i a`gdYf]g`F`Y]b[c`X"5i WXY
VY`_UbbhY`GWXY`Ui gd]Y`Yf`k]Y`7\`f]ghcd`A Uf]U`<YfVgh`i bX`æUWXY]a
?fi`k`YfXYb`Z0f`]\fY`@Y]ghi b[Yb`[YV`fh"

8 Ug`:]`a`ZYgh]j U`n]Y`h`:]`a`VY[Y]ghYfhY`i bX`DfcZ]g`Ui g`XYf`6fUbWXY`Ub
i bX`V]YhYhY]bY`k]WXYh][Y`6Ø`bYž`i a`X]Y`J]Y`ZU`h`i bX`?fYUh]j]hÅh
XYg`XYi hgWXY`b`:]`a`g`ni`dfÅgYbh]YfYb" A]WXYU`Y`?Øhn`\cV`]b`gY]bYf
5bgdfUWXY`X]Y`6YXYi hi b[`XYg`:]`a`ZYgh]j U`g`Yf] cfž`XUg`bUWXY`XYb
:]`a`ZYghgd]Y`Yb`]b`6Yf`]b`XUg`nk`Y]h[fØ`hY`]b`8Yi hgWXY`UbX`]gh`i bX

Y]bY`k Yfhj c`Y'; Y`Y[Yb\Y]h`ZØf':]`a Ya UWXYf`XUfghY`hž]\fY`K Yf_Y
Y]bYa `VfY]hYb`Di V`_]i a `j cfni ghY`Yb"

⊕`X]YgYf`ZYgh]WXYb`5ha cgd\ÀfY`k i fXY`b]W`h`bi f`X]Y`Y`i h[Y
GhUfgž`gcbXYfb`Ui W`X]Y'; YgW]W`hYb`i bX`H\Ya Ybž`X]Y`]a `:]`a
VY\UbXY`h`k YfXYbž`[Yk ØfX][h`8 Ug': Ygh]j U`]ghY]b`k]W`h][Yf`Cfhž
i a `ØVYf': fU[Yb`XYf`→XYbh]h`hž`XYg`K]XYfghUbXg`i bX`XYg
a YbgW`]WXYb`A i hg`bUW`ni XYb`_Yb"

9]b`6`]W`_]b`X]Y`Ni `i bZh`XYg`XYi hgWXYb`':]`a g

8]Y`5i gnY]W`bi b[`j cb`@j `@]gU': f]Yg`i bX`X]Y`DfÀgYbhUh]cb`]\fYg
:]`a g`gdf]W`h`6ÀbXY`ØVYf`X]Y`F]W`hi b[ž`]b`X]Y`g]W`X]Y`XYi hgWXY
:]`a]bXi ghf]Y`VYk Y[h`9g`]ghY]bY`NY]h`XYf`FYZYI]cb`ØVYf`X]Y
JYf[Ub[Yb\Y]h`i bX`X]Y`5fhi bX`K Y]gYž`k]Y'; YgW]W`hYb`YfnÀ`h
k YfXYb`5b[Yg]W`hg`XYf`J]Y`nU`\`Ub`DfY]gYb`i bX`5bYf`_Ybbi b[Ybž
X]Y`\]Yf`j Yf`]Y\Yb`k YfXYbž`Àggh`g]W`Yf`_YbbYbž`XUgg`XYf
XYi hgWXY`':]`a `ghYhg`Ui Z`XYf`Gi WXY`bUW`bYi Yb`DYfgdY`_h]j Yb`i bX
9fnÀ`k Y]gYb`]gh`9g`V`Y]Vh`UVni k UfhYbž`k Y`WXY`bYi Yb`HU`YbhY
i bX`gdUbbYbXYb`; YgW]W`hYb`]b`XYf`Ni `i bZh`Ui g`X]YgYf
XmbUa]gWXYb`GnYbY`Y`Yfj cf[Y\Yb`k YfXYb"

@j `@]gU': f]Yg`]gh`b]W`h`bi f`ZØf`]\fY`F c`Y`]b` 6UVm`cb`6Yf`]b
VY`_Ubbhž`gcbXYfb`\Uh`Ui W`]b`j YfgW]YXYbYb`UbXYfYb
DfcXi `_h]cbYb`]\f`? ØbbYb`i bhYf`6Yk Y]g`[YghY`h`'⊕`]\fYb`ZfØ`Yb
? Uff]YfYhU[Yb`gd]Y`hY`g]Y`]b':]`a Yb`k]Y` 8]Y`ei YfY]bghY][Yf`i bX
C`\6cm`"BcW`VYj cf`g]Y`]b`XYf`VY`]YVhYb`GYf]Y`X]Y`<Ui dhfc`Y
ØVYfbU`a ž`hfUh`g]Y`]b`H\YUhYfdfcXi `_h]cbYb`Ui Zž`k Ug`]\fY
J]Y`gY]h][`_Y]h`i bX`]\f`9b[U[Ya Ybh`ZØf`X]Y`GW`Ui gd]Y`_i bgh
i bhYfghfY]W`h`→f`HU`Ybh`nY][h`g]W`Ui W`]b`XYf`5fhž`k]Y`g]Y
_ca d`YI Y`7\UfU`_hYfY`XUfghY`h`i bX`]bYb`H]YZY`j Yf`Y]\h`→fY
F c`Y`]b` ⊕`@]YVYž`9i fY`<]`XY`Yfa Ø[`]W`h`Yg`]fž`X]Y`hfU[]gWXYb
I a ghÀbXY`XYg`K]XYfghUbXYg`[Y[Yb`XUg`BUn]!F Y[]a Y`Ui W`
Ya ch]cbU`[`Ui V`k ØfX][`ni`j Yfa]hY`b"

8Yf':]`a `gY`Vgh`]gh`b]W`h`bi f`Y]bY`V]c[fUZ]gWXY`9fnÀ`i b[ž
gcbXYfb`k]fZh`Ui W`Y]b`@]W`h`Ui Z`X]Y`K]XYfghUbXgVYk Y[i b[`]a
8f]hYb`F Y]W`"8]Y` F chY`? UdY`Y`k Uf`Y]bY'; fi ddY`j cb

K]XYfghUbXg_Àa dZYfbž'X]Y [Y[Yb'XUg'BG!FY[]a Y'_Àa dZhYb'i bX
=Zcfa Uh]cbYb'Ub'X]Y'5`]]YfhYb'k Y]hYf[UVYb"'<]XY'7cdd]ž'X]Y
:][i fž'X]Y '@j '@]gU': f]Yg'j]b'XYf'J YfZ]'a i b['j Yf_ÖfdYfhž'gh'Y]bYg
XYf'j]Y'Yb'hfU[]gWXYb'6Y]gd]Y'Yž'k]Y'ghUf_'X]Y'J YfZc`[i b['i bX'X]Y
; fUi gUa _Y]hYb'XYg'?f]Y[Yg'X]Y'dYfgÖb`]WXYb'GWX]W_gU'Y'XYf
A YbgWXYb'VYY]bZi gghYb"'8Yf':]a 'h\Ya Uh]g]Yfh', VYfnYi [i b[Ybž
@c mU']hÀhi bX'XYb'\c\Yb'DfY]g'ZÖf': fY]\Y]h'j]b'Y]bYf'NY]h'XYf
I bhYfXfØW_i b["

8]Y'6YXYi hi b['XYg':]`a ZYgh]j U`g
@i Xk][g\ UZYb

8 Ug':]`a ZYgh]j U`@i Xk][g\ UZYb']gh'Y]b'VYXYi hYbXYg'_i 'hi fY`Yg
9fY][b]gž'XUg'Y]bY'D'UhhZcfa 'ZÖf'XYi hgWXY':]`a Ya UWXYf'i bX
GWXUi gd]Y'Yf'V]YhYh"A]h'gY]bYf': YgWXYhYž'X]Y'V]g'j]bg'X\ f'&\$\$(
ni fØW_fY]W hž'\Uh'g]W'XUg': Ygh]j U`U`g'Y]bY'k]W h][Y' =gh]hi h]cb'j]b
XYf'XYi hgWXYb':]`a gnYbY'YhUV`Yfh''9g'n]Y\h'YXYg'X\ f'nU\`fY]WXY
:]`a gW UZZYbXYž'gck]Y'W]bYUgh]gWXY'HU'YbhY'i bX':]`a VY[Y]ghYfhY
Ui g[Ub'n'8Yi hgW'UbX'Ub"'9g'gh'Y]bY'; Y'Y[Yb\Y]hž'j]Y'Y'bYi Y
K Yf_Y'ni 'YbhXYW_Yb'i bX'X]Y'J]Y'ZÀ'h][_Y]h'XYg'XYi hgWXYb':]`a g
ni 'ZY]Yfb"'8]Y'5i gnY]W]bi b[Ybž'X]Y'k À\ fYbX'XYg': Ygh]j U`g
j Yf[YVYb'k YfXYbž'g]bX'XU\Yf'b]W h'bi f'Y]bY'5bYf_Ybbi b['ZÖf'X]Y
'?Øbgh'Yfž'gcbXYfb'Ui W'Y]bY'A Ö['W_X]Y]hž'ei U'hUh]j Y':]`a Y'j]b'XYf
VfY]hYb'^2 ZZYbh]W_X]Y]h'VY_Ubbh'ni 'a UWXYb"

8 Ug': Ygh]j U`ZÖfXYfh'Ui W'XYb'5i ghUi gW'nk]gWXYb'YhUV`YfhYb
i bX'Ui ZghfYVYbXYb'HU'YbhYb"'K À\ fYbX'XYf'%-': Ygh]j U`hU[Y
k YfXYb'b]W h'bi f'DfY]gY'j Yf`]Y\Ybž'gcbXYfb'Yg'V]YhYb'g]W'Ui W
nU\`fY]WXY'; Y'Y[Yb\Y]hYb'ni a 'BYhk cf_]b['i bX'ni f'DfÅgYbhUh]cb
]bbcj Uh]j Yf'XYYb"'': Øf'Ni gWXYb'Yf']gh'Yg'Y]b'9f'YVb]gž'XUg'ØVYf
XUg'V`c»Y'5bgWXYb'Yb'j cb':]`a Yb'\]bUi g[Y\h' 'Yg'V]YhYh
9]bV`]W_Y]b' _fYUh]j Y'DfcnYggY'i bX'X]Y'A Ö['W_X]Y]hž'a]h'?Øbgh'Yfb
dYfgÖb`]W'j]b'?cbhU_h'ni 'hfYhYb"

9]b'F ØW_V`]W_`Ui Z'X]Y'9fZc`[Y'j cb '@]j '@]gU
: f]Yg

@j`@]gU': f]Yg`5i Zgh]Y[`]b`XYf':]`a k Y`h]gh`VYgcbXYfg
VYY]bXfi W_YbXžXU'g]Y`b]W`h`bi f`a Y`fYfY`5i gnY]W`bi b[Yb
[Yk cbbYb`\\Uhž`gcbXYfb`Ui W` `]b`j YfgW`]YXYbYb`; YbfYg`i bX
: cfa UhYb`[YUfVY]hYh`\\Uh"BYVYb`]\fYb`dfY]g[Y_f`ÒbhYb`F c`Yb`]b
GYf]Yb`i bX':]`a Yb`\\Uh'g]Y`Ui W` `]b`H\\YUhYfdfcXi _h]cbYb`[Ygd]Y`hž
k Ug']\fY': À\][_Y]hž`Ui Zj YfgW`]YXYbYb`6Ø\`bYb`ni`[`ÀbnYbž`nY][h"
; YdfÀ[hj`cb`Y]bYa` _`UfYb`G]bb`ZØf`]\fY`?i bghž`\\Uh: f]Yg`]a`a Yf
k]YXYf`VYk]YgYbž`XUgg`g]Y`VYfY]h]ghž`g]W` `]b`X]Y`9a`c]h]cbYb`i bX
X]Y`<]ghcf]Y`XYf':][i fYb`\\]bY]bni`j YfgYhnYbž`X]Y`g]Y`XUfghY`h"
8]YgY`<]b[UVY`nU`\\h'g]W` `Ui`g`i bX`j Yf`Y]\`h'\fYb`DYfZcfa UbW`g
Y]bY`Ui`h\\Yb]h]gW`Y`H]YZ"

8]Y`[Y[Ybk`Àfh][Y`Dcdi`\\Uf]h`Àh`j`cb': f]Yg`nY][hž`k]Y`k]W`h][`Yg`]ghž
hU`Ybh]YfhY`GW`Ui`gd]Y`Yf]bbYb`i bX`GW`Ui`gd]Y`Yf`]b`XYf`XYi hgW`Yb
:]`a]bXi`ghf]Y`\\Yfj`cfni`Vf]b[Yb`i bX`ni`ZØfXYfb" `ÀfY': À\][_Y]hž
\\]ghcf]gW`Y`i bX`nY]h[Yb`Ògg]gW`Y`F c`Yb`a]h`9a`dUh\\]Y`i bX`6f]`Ub`n
XUfni`ghY`Ybž`a UW`h'g]Y`ni`Y]bYf`XYf'[YZfU[hYghYb
GW`Ui`gd]Y`Yf]bbYb`XYg`@UbXYg" `5i W` `]\f`9b[U[Ya`Ybh`]b
Dfc`Y`_hYbž`X]Y`[YgY`gW`UZh]W` `fY`Yj`UbhY'; YgW`]W`hYb`Yfn`À`Ybž
`Àggh`g]Y`ni`Y]bYa` `J`cfV]`X`ZØf`j]Y`Y`Ui`ZghfYVYbXY
GW`Ui`gd]Y`Yf]bbYb`k`YfXYb"

· · B 5;

8YhU]`g

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