

GWk UfnYf'5i X]'5']b'6Ui a \c`XYf. 'HÅhYf
VYgWÅX][Yb'5i hc' '<]bk Y]gY'YfVYhYb

⊕'6Ui a \c`XYf'k i fXY'Y]b'gWk UfnYf'5i X]'5' 'VYgWÅX][h'
8]Y'Dc`nY]'gi W'h'NYi [Ybž'X]Y'<]bk Y]gY'ni 'XYb'HÅhYfb
[YVYb'_ÒbbYb"

⊕'XYf'BUW'hj ca' '&' "'5i [i gh&\$&('V]g'ni a 'ZfØ\Yb'A cf[Yb'XYg
&("5i [i gh&\$&('YfY][bYhY'g]W'Y]b'J cfZU``]b'6Ui a \c`XYfž'XYf
X]Y'5i Za Yf_gUa _Y]h'XYf'@c_U'VY\ØfXYb'Ui Zg]W'nc ["'5i ZY]bYa
Duf_d`Uhn'[Y[YbØVYf'XYa 'GcbbYbghi X]c' Hfcd]W'`< YUh ž'8YggYb
5XfYggY']b'XYf'<Ui dhghfU» Y``Y[hž'k i fXY'Y]b'gWk UfnYf'5i X]'5'
VYgWÅX][h'8Ug': U\fnYi ['k Uf'Y]b'VY'YVhYg'A cXY'ž'VY_Ubbh'ZØf
gY]bY'gdcfh]W'Y'9'Y[Ubnž'i bX'XUg'[Ya UW'h'VYXYi hYhY'Y]bYb
gW'a Yfn\UZhYb'J Yf'i gh'ZØf'XYb'9][YbhØa Yf"

B UW'XYb'YfghYb'9fa]h'i b[Yb'XYf'Dc`nY]'k i fXY'ZYgh[YghY'hž
XUgg'X]Y'HÅhYf'VY]XY'5i » Ybgd]Y[Y'XYg': U\fnYi [g'UV[YhfYhYb
\UhhYb"8UfØVYf'\]bUi g'\UhhYb'g]Y'X]Y'?UfcggYf]Y'gck c`\`Ui ZXYf
: U\fyf!'U'g'Ui W'Ui ZXYf'6Y]ZU\fyfgY]hY'Yf\YV'W'nyf_fUhhž'k Ug
Ui ZY]bYb'VYk i gghYb'J UbXU'ga i g'\]bXYi hYh"8YfUfh][Y'HUHyb
_ÒbbYb'b]W'h'bi f'ZØf'X]Y'VYhfc'ZYbYb': U\fnYi [\U'hYf'gY\ f
i bUb[YbY\ a'gY]bžg]Y'k YfZYb'Ui W'Y]b'@]W'h'Ui ZX]Y
<YfUi gZcfXYfi b[Yb']b'6Yni ['Ui ZG]W'Yf\Y]h'i bX'CFXbi b[']b'XYf
FY[]cb"

8 YhU]`g'XYg'J cfZU``g

- 8 Uhi a . '&' "'V]g'&("5i [i gh&\$&(
- C fh. 'Duf_d`Uhn'[Y[YbØVYf' Hfcd]W'`< YUh ž'6Ui a \c`XYf
- 6Yhfc'ZZYbYf': U\fnYi [hmd. 'GWk UfnYf'5i X]'5'
- 5fh'XYf'6YgWÅX][i b[. '5V[YhfYhYbY'5i » Ybgd]Y[Y''i bX

nYf_fUhhY ? UfcggYf]Y

8]Y`Dc`nY]]b`6Ui a \c`XYf`Uh`i bj YfnØ[`]W`9fa]h`i b[Yb`ni `XYa
JcfZU``Ui Z[Ybca a Yb`i bX`bi b`XUni `Ui Z[Yfi ZYbž`NYi [Yb`ni
a Y`XYb`cXYf`<]bk Y]gY`ni ` [YVYbž`X]Y`ni f`9f[fY]Z[b[`XYf`H`hYf
ZØ\ fYb`_ÖbbhYb``9g`]gh`Y]b`gma dhca Uh]gW`Yf`5_hj`cb
JUbXU`]ga i gžXYf`gck c`\`U`g`5i gXfi W`_j`cb`5bcbma]h`h`U`g`Ui W`
U`g`NY]W`Yb`j`cb`F`YgdY`h`cg][`_Y]h`[Y[YbØVYf`XYa `9][Ybhi a
UbXYfYf`VYhfUW`hYh`k YfXYb`_Ubb``8]Y`GW`ÄX][i b[`j`cb
: U\fnYi [Yb`X]YgYf`5fh`ghY``Yb`bUW`A`Y]bi b[`j`Y`Yf`6Øf[Yf`b]W`h
bi f`Y]bY`k]fhgW`UZh]W`Y`6Y`Ughi b[`ZØf`X]Y`9][YbhØa Yf`XUfž
gcbXYfb`Ui W`_Y]bY`dgmW`c`c[]gW`Y`6YY]bhf`ÄW`h][i b[`ž`XU`X]Y
VYhfcZYbYb`DYfgcbYb`g]W`_]b`]\fYf`I a [YVi b[`i`bg]W`Yf`ZØ\`Yb
_ÖbbYb"

8]Y`Dc`nY]]bgdY_h]cb`6Ui a \c`XYf`Uh`Ui Z`]fYf`K YVg]hY`8YhU]`g
j YfÖZYb`h]W`hi bX`X]Y`6Øf[Yf`Yfa i h][hž`g]W`VY]`gUW`X]Yb`]W`Yb
<]bk Y]gYb`ni `a Y`XYb``8]Y`?ca a i b[_Uh]cb`nk]gW`Yb`XYf`Dc`nY]
i bX`XYb`6Øf[Yfb`gd]Y`h`Y]bY`YbhgW`Y]XYbXY`F`c``Y`VY]`XYf
J YfVfYW`YbgVY`Äa dZ[b[``8 Ug`J YfhfUi Yb`]b`X]Y
GhfUZ] YfZc`[i b[gVY\ÖfXYb`]gh`Y]b`k YgYb`h]W`Yf`6YghUbXhY]`XYf
[YgY`gW`UZh]W`Yb`C`fXbi b[ž`i bX`gc`W`Y`J`cfZÄ``Y`_ÖbbYb`X]YgYg
J YfhfUi Yb`[YZÄ`fXYb"

? cbhU_h]bZcfa Uh]cbYb`XYf`Dc`nY]

⇒ a : U`Y`j`cb`<]bk Y]gYb`ni `X]YgYa `JcfZU``_ÖbbYb`g]W`6Øf[Yf`Ub
Zc`[YbXY`?cbhU_hXUhYb`k YbXYb.

6Y\ÖfXY

?cbhU_h

Dc`nY]]bgdY_h]cb`6Ui a \c`XYf	GUb_h!<i VYfhi`g!GhfU» Y`%ž)) ++(`6Ui a \c`XYf HY`YZcb.`\$* +, `! - - %! \$ HY`YZUI .`\$* +, `! - - %!) \$ 9a U]`. d]VUi a \c`XYf4 dc`nY]"f`d"XY K YVg]hY.`k k k "dc`nY]"f`d"XY#d]V Ui a \c`XYf
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J UbXU`]ga i g`hf]Zh`b]W h`bi f`XYb`]bX]j]Xi Y`Yb` : U\fnYi [VYg]hnYfž
gcbXYfb` \Uh`Ui W`k Y]hfY]W YbXY`5i gk]f_i b[Yb`Ui ZX]Y
K U\fbY\`a i b[`j cb`G]W Yf\Y]h`]b`Y]bYf` ; Ya Y]bXY`"8]Y`60f[Yf
g]bX`cZh`VYgcf[h`0VYf`gc`W Y`J cfZ`A`Y`i bX`n]Y\Yb` [Y[YVYbYbZU`g
]\fY`GW`0ggY`0VYf`X]Y`U` [Ya Y]bY`G]W Yf\Y]h`i bX`XYb`F YgdY_h
]bbYf\U`V`XYf` ; Ya Y]bgW UZh`8 U\Yf`]gh`Y]bY`gW bY`Y`i bX
YZZ`_hj`Y`F YU`_h]cb`XYf`6Y\0fXYb`i bYf`Agg`]W ž`i a`XUg`J YfhfUi Yb
k]YXYf\Yfni ghY`Yb`i bX`Ub[Z]gh][`ni`ghAf`_Yb`"9]b`ghUf`_Yg
 ; Ya Y]bgW UZhg[YZ0\`_`Ub b`XUni`VY]hfU[Ybž`gc`W Y`HUHyb`ni
j Yf\]bXYfbž`i bX`X]Y`0fh]W Y`Dc`nY]`]gh`Ui ZX]Y`I bhYfgh0mi b[`XYf
60f[Yf`Ub[Yk]YgYb`"X XY`bcW`gc`_`Y]bY`b Zcfa Uh]cb`_`Ub b`XYb
YbhgW Y]XYbXYb`I bhYfgW]YX`a UW Yb`"

8]Y`GUW VYgW`AX][i b[`Ub` : U\fnYi [Yb`ghY`h`i]b`8Yi hgW`UbX`Y]b
Yfbghni bY\`a YbXYg`DfcV`Ya`XUfž`XUg`gck c`\`df]j UhY
 : U\fnYi [VYg]hnYf`U`g`Ui W`X]Y`0ZYbh]W Y`G]W Yf\Y]h`VYhf]Zh`i`a
XUf`&\$&&k i fXYb`Vi bXYgk Y]hfi bX`)) "\$\$\$` : A`Y`j cb
GUW VYgW`AX][i b[`Ub` : U\fnYi [Yb` [Ya Y`XYhž`k Ug`Y]bYb`Y]W hYb
5bgh]Y[`]a`J Yf[`Y]W`ni`XYb`J cf\U`fYb`VYXYi hYh`8]YgY`HUHyb
_0bbYb`gck c`\`Ui g`J UbXU`]ga i g`U`g`Ui W`Ui g`dYfg0b`]W Yb
?cbZ`_hYb`YfUi g[YgW Y\Yb`i bX`\UVYb`\`Ai Z][`Yf\YV`]W Y
Ya ch]cbU`Y`gck]Y`Z]bUbn]Y`Y` : c` [Yb`Z0f`X]Y`6YhfcZZYbYb`"

GhUh]gh]_Yb`nY][Ybž`XUgg`j cf`U`Ya`]b`i fVUbYb` ; YV]YhYb`X]Y
< Ai Z][_Y]h`gc`W Yf`J cfZ`A`Y`ghY][h`8]Yg`_0bbhY`i bhYf`UbXYfYa
XUfUi Zni f0W`ni Z0\`fYb`gY]bž`XUgg`]b`gh`AXh]gW Yb`F Y[]cbYb`a Y\`f
 : U\fnYi [Y`i bX`XUa`]h`Y]b`\0YfYg`DchYbn]U`Z0f
nk]gW Yba YbgW`]W Y`?cbZ`_hY`j cf\`UbXYb`g]bX`"@Ui h`XYa`
**GhUh]gh]gW Yb`6i bXYgUa h`[UV`Yg]b` [fc»Yb`Gh`AXhYb`k]Y`6Yf`]b
cXYf`<Ua`Vi f[`VYgcbXYfg`j]Y`Y` [Ya Y`XYhY` : A`Y`j cb`J UbXU`]ga i g
Ub`5i hcgž`k Ug`X]Y`Bchk YbX][_Y]hj`cb`G]W Yf\Y]hga U»bU\`a Yb
i bX`0ZYbh]W Yb`5i Z`_`Afi b[gdfc[fUa`a Yb`i bhYfghfY]W h`"**

9]bZ`i gg`j cb`J UbXU`]ga i g`Ui ZX]Y
 ; Ya Y]bgW UZh

J UbXU`]ga i g`Ub` : U\fnYi [Yb`\Uh`k Y]hfY]W YbXY`5i gk]f_i b[Yb
Ui ZX]Y`Yk Y][Y` ; Ya Y]bgW UZh`Ni a`Y]bYb`YfnYi [h`Yf`Y]b` ; YZ0\`

XYf'i bg]WYf\Y]hi bhYf'XYb'5bk c\byfbž'k Ug'X]Y '@VYbgei U]hÀh
VYY]bhfÀW]h[Yb'_Ubb''Ni a'UbXYfYb'ZØ\fh'Yf'ni'k]fhgWUZh]WYb
GWÀXYb'b]W]h'bi f'ZØf'X]Y': U\fnYi [VYg]hnYfž'gcbXYfb'Ui W'ZØf'X]Y
J Yfg]WYfi b[g[YgY''gWUZhYb''8]YgY'GWÀXYb'gW'U[Yb'g]W'jb
\Ø\YfYb'DfÀa]Yb'ZØf'U''Y'?i bXYb'b]YXYf''

8UfØVYf'\]bUi g'_ØbbYb'gc'WY'J cfZÀ''Y'Ui W'XUg'gcn]U'Y'; YZØ[Y
VYY]bZi ggYb''K Ybb'A YbgWYb'XUg'; YZØ\''\UVYbž'XUgg']\fY
K c\ b[Y[YbX'i bg]WYf']ghž'n]Y\Yb'g]Y'a Ø['WYfk Y]gY']b
6YhfUW]hž'i a ni n]Y\Ybž'k Ug''Ub[Zf]gh[Y'5i gk]f_i b[Yb'Ui ZX]Y
'c_U'Y'K]fhgWUZh'i bX'XUg'; Ya Y]bgWUZhg'YVYb'\UVYb'_Ubb''

A U» bU\ a Yb'ni f'DfÀj Ybh]cb'j cb GUW VYgWÀX][i b[

I a'X]Y'NU\''XYf'J UbXU']ga i gZÀ''Y'ni'fYXi n]YfYbž'\UVYb
j YfgW]YXYbY'GhÀXhY']b'8Yi hgW'UbX'dfÀj Ybh]j Y'A U» bU\ a Yb
]a d'Ya Ybh]Yfh''8Uni '[Y\ØfYb'i bhYf'UbXYfYa'X]Y' ðghU''Uh]cb'j cb
, VYfk UW]i b[g_Ua YfUg']b'VY_UbbhYb'DfcV'Ya ncbYbž'X]Y
j YfghÀf_hY'DfÀgYbn'j cb'G]WYf\Y]hg_fÀZhYb'i bX'X]Y'5i Z_Àfi b[
XYf'6Yj Ø_Yfi b['ØVYf'X]Y': c'[Yb'j cb'J UbXU']ga i g''J]Y'Y
GhUXhj Yfk U'hi b[Yb'_ccfX]b]YfYb'Ui W'a]h'c_U'Yb
Dc`]nY]X]YbghghY''Ybž'i a '[Yn]Y'hY'GhfUhY[]Yb'ni'Ybhk]W_Y'bž'X]Y
g]W'Ui ZVYgcbXYfg'VYhfcZZYbY'; YV]YhY'_cbnYbhf]YfYb''

- 9f\Ø\i b['j cb'Dc`]nY]ghfY]ZYb'j]b'<cWf]g]_c[YV]YhYb
- ² ZYbh']W_Y]hgUfVY]h'ni f'GYbg]V']]g]Yfi b['ZØf'XUg'DfcV'Ya
J UbXU']ga i g
- : ØfXYfi b['j cb'B UW VUfgWUZhgk UWYb'ni f'GhÀf_i b['XYg
; Ya Y]bgWUZhg[YZØ\`g
- :]bUbn]Y''Y'5bfY]nY'ZØf'X]Y' ðghU''Uh]cb'j cb
G]WYf\Y]hga U» bU\ a Yb'Xi fW': U\fnYi [VYg]hnYf

8]Y''c_U'Y'Dc`]nY']]b'6Ui a \c'XYf'\Uh]b'XYf'J Yf[Ub[Yb\Y]h
À\b`]WY': À''Y'i bhYfgi W]h'i bX'Yfa i h[h'X]Y'² ZYbh']W_Y]hž'g]W
U_h]j 'Ub'XYf'@Øgi b['gc'WYf'DfcV'Ya Y'ni 'VYhY']][Yb''<]bk Y]gY
Ui Zgc'WY'HUhYb'_ØbbYb'cZh'XYb'i bhYfgW]YX'a UWYbž'i a'HÀhYf
ni f'FYWYb'gWUZh'ni'n]Y\Yb'i bX'X]Y'Wca a i b]hm]bg[YgUa h'ni

gV\ØhnYb"

K Y]hYfY' ðZcfa Uh]cbYb'ni f'6Y_Àa dZi b['j cb'J UbXU`]ga i gi bX
ni f'Dc`]nY]UfVY]hj cf'C fh'Z]bXYb'G]Y'Ui Z'XYb'GY]hYb'XYf'Dc`]nY]
F \Y]b`UbX!DZU`n"

8YhU]`g

6Ygi V\Yb'G]Y'i bg'Ui Z.'b!U["XY