

BCJ 9A 69F '&\$z'&\$% '#'%\$\$DA'; A Hze' '&\$% 'HUf[Yh7cfd'9Ufb]b[g'7U`

'HUf[Yh7cfdcfUh]cb! 7\U]fa Ub/ 79C 'HUf[Yh7cfdcfUh]cb! 9I YWh]j YJD/ 7: C 'HUf[Yh7cfdcfUh]cb! JD'cZ=F 'HUf[Yh7cfdcfUh]cb! 9I YWh]j YJD/ 7CC 'HUf[Yh7cfdcfUh]cb! 9I YWh]j YJD/ 7\]YZA YfWUbX]g]b['CZZ]Wf

`7c.bgi a Yf 9X[Y F YgYUfWl2@97 ! 8]fYVltcfcZF YgYUfWl2GYb]cfF YfU]` 5bU ngfv 'A UbU[]b[DUffbYf



BCJ 9A 69F '&\$ž&\$% '#'%\$\$DA '; A HžE' '&\$% 'HUf[Yh'7cfd '9Ufb]b[g'7U`



BCJ 9A 69F '&\$z &\$% '#'%\$\$DA'; A Hze' '&\$% 'HUf[Yh7cfd'9Ufb]b[g'7U'

BCJ 9A 69F '&\$ž&\$% '#'%\$\$DA '; A HžE' '&\$% 'HUf[Yh'7cfd '9Ufb]b[g'7U`



<UfX']bYg'gUk Yj Yb'gHfcb[Yf'dYfZcfa UbWžWta d]b[']b'h\Y'\][\'g]b['YX][]hg'h\]g'ei UfhYf"H\]g'k Ug'YX Vn'Hcngzk\]W gUk Wta d'[fck h\'cZ a cfY'h\Ub'&\$i "'5g'nti '_bck zk YfjiY']bjYghYX']b'h\Y'HcmWhY[cfm'h\]g'mYUfz[]j Yb'h\Y'fYWbhWcgi fYg'cZHcng'"F"1 g'ghcfYg'Ufci bX'h\Y
 Wti bHfn'i'Gc'ZUf'h\]g'mYUfzci f'HcnfYgi 'hg\Uj YYI WYXYX'ci f'YI dYWtUh]cbg']b'hYfa g'cZgU'Yg'UbX'g\UfY"

6YncbXfYgi`hg`]b`ci f`a cghX]gWfYh]cbUfmWlhY[cf]Ygžk YfflYUgc`fYU`md`YUgYX'k]h. [fck h. fUhYg]b`ci f``YggX]gWfYh]cbUfm9ggYbh]U`g'UbX 6YUi hm'UbX: ccX'UbX'6Yj YfU[Y'UfYUg''K Y'gUk 'dUfh]W\'Uf'ci hghUbX]b[`dYfZcfa UbW']b`9ggYbh]U`g'UbX'6YUi hmäk\]W. [fYk 'ZUghYf'h\Ub'h\Y Wa dUbm'Uj YfU[Y''K]h\]b'h\]g'WlhY[cfmăk Y'gUk 'Xci V'Y!X][]h[fck h\]b'6UVmăk\]W. U[U]bž]g'U'gc VYbYZ[h]b['Zfca 'h\YWcgi fYg'cZHcng'''F'' I g'UbX'6UV]Yg'ôFōil g'ghcfYg]b'h\Y1 "G"

±0 UXX]h]cbžk Y`]bhfcXi WX" bYk]bbcj Uhjj Y`ck b`UbX YI Wi gjj Y`VfUbXg`]b h\Y`ei UfhYf. Ei]d`UbX`BUhjj Y`]b DYfgcbU`7UfY/UbX`ci f`bYk 9ggYbhjU`gl ck bYX`VfUbXžGa Ufh`nžk \]M.]gXYg][bYX`Zcf'h\Y`nci b[YfVi X[YhI WtbgV]ci g[i Yghk \c^*]j Yg]b`ga U`Yf`gdUW'g"

±b: ccX'UbX'6Yj YfU[YžV¢a d'gU'Yg'[fYk 'UVci h'(ı]b'h\Y'h\]fX'ei UfhYfžV¢bg]ghYbhk]h\ci f'gYV¢bX'ei UfhYf'dYfZcfa UbW'''K]h\]b'h\Y WthY[cfnžk Y'gUk ghfcb[žYbV¢i fU[]b[fYgi hg]b'ci f'ck b'VfUbX'Uggcfha YbhžU'cb[k]h\Xci V'Y!X][]h\v¢a dg'U[U]b']b'UXi 'h6Yj YfU[Y''

K\]'Y]rfigi]a dcffulohinc ZcWgcb'ci f'Uvgc'i hY'[fck h\ fUhYgizci f'hYua 'U'gc'a U]lohU]log'UX]gV[ld']bYX ZcWg'cb'a Uf_Yhg\UfY'a Yhf]lwgzk\]W [bX]WhY'HUf[YhfigifY'Y] UbW'U[U]loghici f'Wa dYh]njj Y'gYh''Cb'h\YgY'a YUgi fYgzk Y'gUk 'Ubch\Yf'ei UfhYf'cZWabg]ghYbhighfcb['dYfZcfa UbW'' H\]fX'ei UfhYf'XUhU'g\ck YX'k Y'Wabh]bi YX'hc'[U]b'a YUb]b[Zi ''g\UfY'UWfcggYj YfmcbY'cZci f'WafY'a YfW\UbX]g]b['WhY[cf]Yg'UbX'bYUf'm'U' cZh\Y'gi VWlhY[cf]YgVYbYUh\h\Ya "'H\]g'fY]bZcfWg'k\Uhk Y'\Uj Y'VYYb'gUh]b['Zcf'gca Y'h]a Yzh\UhhfUZZ]W]g'U_Yma YUgi fY'Zcf'i g'VYWli gY k\YbYj Yf'k Y'[U]b'U'bYk 'hf]d 'Zfca 'ci f'[i Yghz'h\YmhYbX'hc'g\cd'a i 'h]d'Y'WlhY[cf]Ygz']Zh]b['dYfZcfa UbW'UWfcgg'h\Y'VcUfX"

#figiUgc]a dcffubhirca U]bHJ]bUVUUbWrVYkkYYbg\UfY[U]bg]bcifa cghX]gVfYh]cbUfnfubX^YggX]gVfYh]cbUfnfuVhY[cf]Yg'H\UffigVYWigY k\]YkY'UkUngikUbhircg\]bYVf][\hYghXif]b[_YmgYUgcbU'a caYbhg^]_Y6UW!hc!GWcc`z6UW!hc!7c``Y[YUbX`<U`ckYYbz]hfigih\Y 9ggYbh]Ugz6YUihnUbX:ccXUbX`6YjYfU[YWhY[cf]Ygh\UhgighU]bcifhfUZJWUbX'gUYgVYkkYYbh\YV][[YghgYUgcbU'YjYbhg'

BCJ 9A 69F &\$ž&\$% #%\$\$DA; A HžE' &\$% HUf[Yh7cfd 9Ufb]b[g7U`

Uj YfU[Y'f]WYfl"5gik YfjY XYgMf]VYX]b'df]cf'ei UfhYfgžVch\ cZh\YgY'a Yhf]Mg'fYZYMfUb]bVfVUg]b['dYbYhfUh]cb cZga U`Yfžei]W_'UbX'Z]`!]b hf]dgžk \]M\ 'UfY'[fck]b['a i W\ 'ZUghYf'UhHUf[Yhh\Ub 'Zcf'h\Y]bXi ghfmcj YfU`"H\]g'hYbX'fYZYMfg'h\Y'[i YghfYgdcbgY'hc ci f'k cf_cj Yf'h\Y 'UghWi d'Y'cZmYUfg'hc Yb\UbW Wbj Yb]YbW 'UbX Ybgi fY'k Y'UfY'df]WX'f][\hYj YfmXUnžk \]M\]g'fY]bZcfWX Vmci f'HUf[YhF i b'UbX'8cbY a Uf_Yh]b[Wa dU][b"

6YncbX Wta dUfUV Y gU Ygzci f hchU gU Yg [fck h\ cZ) "++ "fYZYMg U bYk ghcfY Wtbhf]Vi h]cb cZUVci h*\$ VUg]gdc]bhg"5g6f]Ub a Ybh]cbYXž h\YgY ghcfYgXY^]j Yf j Yfm\][\ gU YgdfcXi Mjj]hmäk \]M\ U`ck gh\Ya hc a U_Y U a YUb]b[Zi `Wtbhf]Vi h]cb hc ci f [fck h\ Yj Yb Ugcj YfU` gei UfY ZcchU[Y]gXck b g] [\himMta dUfYX k]h\ `UghmYUf"

Ci f'h\]fX'ei UfhYf'[fcgg'a Uf[]b'fUhY'cZ&, "+1 'k Ug`ck Yf'h\Ub'ci f'Yl dYWM/Ijcbg"H\]g'k Ug'h\Y'fYgi `hcZ\][\Yf!h\Ub!Yl dYWMX'gi dd`mW\U]b WtghgžXf]j Yb VmX][]hU'Zi `Zj`a Ybh'UbX'h\Y WtghcZfYW]j]b['UbX'dfcWtgg]b['U'`Uf[Yf\c`]XUm]bj Ybhcfmdcg]h]cb Wta dUfYX'k]h\ U'mYUf'U[c"

Ci f'h\]fX'ei UfhYf'G; / 5 Yl dYbgY'fUhY'k Ug'UVci hZUhhc``UghnYUF''H\]g'fYZYWfgWtbh]bi YX']bj Ygha Ybhg'k YffY'a U_]b[']b ci f'hYUa z' gdYV]Z]W/`m\ci fgzhfU]b]b['UbX'k U[Ygzk \]W 'U`ck ci f'hYUa g'hc'dfcj]XY'bYk 'UbX'Yb\UbWX'Yl dYf]YbWg']b ci f'ghcfYg''H\YgY']bj Ygha Ybhg UfY VY]b['cZZgYhVm\wtbh]bi YX WtghX]gV]dd`]bY 'Uvficgg'h\Y YbhYfdf]gY'Ug'k Y Wtbh]bi U`mk cf_hc']bVfYUgY YZZJVJYbWfUbX Y`]a]bUhY `ck Yf! df]cf]m*UbX'bcbj U'i Y! UXXYX'k cf_"

Ci f'XYdfYVJUhjcb'UbX'Ua cfhjnUhjcb'Yl dYbgY'fUhY'k Ug'Xck b'UVci h'(\$VUgjg'dc]bhg'Zfca "UghnYUfzfYZYVMJb["ck Yf'8/5 Xc"Ufg'Wa V]bYX k]h\h\YVYbYZJhcZ) "*1 "hchU'fYj Ybi Y'[fck h\"

BCJ 9A 69F '&\$z\&\$% '#'\\$\$DA'; A Hze' '&\$\% 'HUf[Yh7cfd'9Ufb]b[g'7U'

FY[UfX]b['G; / 5'UbX'8/5'Yl dYbgY'fUhYgžk Y'UfY'Yl dYWh]b['fY'Uh]j Y'gHUY]]hmWda dUfYX'k]h\"UghmYUf"H\]gdYfZcfa UbW'gi ddcffg'Ub Yl dYWhYX'fUb['Y'Zcf'Z] ``mYUf'UX't ghYX'9DG'cZ`)"" \$ 'hc")") \$ 'UbX'U; 55D'9DG'fUb['Y'cZ`)"(%hc")"*%H\YYl dYWhYX'fUb['Y'Zcf'th\]gmYUffigi UX't ghYX'9DG'fYdfYgYbhg%i '[fck h\"Uh'h\Y`ck Yf'YbX'UbX'%i 'Uh'h\Y\][\Yf'YbX"'5bX'cZWdi fgYZh\]gfUb['Y']g'U\YUX'cZci f'Yl dYWhYIh]cbg [c]b[']bhc'th\Y'mYUf"5g'k YfjiY'gYYb\VYHYf! h\Ub! Yl dYWhYX'HUZZWUbX'gU'Yg'gc'ZUf'th\]g'mYUfzci f'Vi g]bYgg\Ug'XY`]j YfYX\VYHYf! h\Ub! Yl dYWhXX VcHca "]bY'dYfZcfa UbW'Yj Yb'Ug'k Y Wdb|]bi Y'hc'a U_Ya YUb]b[Zl`]bj Ygha Ybhg']b'ci f'HUbgZcfa Uh]cb

[c]b[]bnc h.Y mYur 5gk Yiji Y gy Yb V Ym Yr n. Ub! Yi d Y Wir X h Tuziji Vubx gu Y ggc 2Ur n.]g mYurzci f Vi gjb Y gg \ug x Y]j Y f X V Ym Yr n. Ub! Yi d Y Wir X h Ub [b] Zi `]bj Y gha Y b hg]b ci f h Tub g Zc fa Uh]cb
6YZcfY`='ri fb`]hVUW_'rc`6f]Ubž=k Ubh'rc`Wgj Yf`cbY`\ci gY_YYd]b[`]hYa "'7cbg]ghYbhik]h\``UghnYUfžk Y`d`Ub'hc`]ggj Y`Ub'i dXUhY'cb'ci f



BCJ 9A 69F &\$ z &\$ % # % \$ \$ DA ; A Hz E ' &\$ % HUf[Yh7cfd 9Ufb]b[g7U`

Gc]Zk Y'1 ghZcWg'cb h\Y'ei UfhYfznti f'gu'Yg'ubX'9DG Wa Y']b 'Uh'uVci hih\Y'a]Xdc]bhz\Vi hinti f'96+l'a Uf[]b'k ug'VY'ck [i]XubW"'GYYa g \[\]

K\mXcbfhi=ghufhžubXh\Yb=fi`hi fb`]hcj Yfhc 7Uh\m'=h\]b_Ugk Y`cc_Unci f`UVgc`i hY'dYfZcfa UbW`]b`h\Y'h\]fX'ei UfhYfžk Y'k YfY'f][\hcb ci fYl dYMuh]cbg"K YWbh]bi Yhc\Uj YUbch\Yfj Yfmghfcb[ei UfhYfk\YfY'hfUZ]W[fYk cj Yf) | "'K Y\UX'j Yfmghfcb[cj YfU`Wa d d dYfZcfa UbW`cZ) "% žUb`UWW`YfUh]cbj` Yfgi g'h\Y'Zfgh\UZcZh\YmYUf"K YXY']j YfYXX][]hU`[fck h\ cZ(-ı žci f`ghfcb[Ygh[fck h\ fUhY'y] Yf" 5bX'k Y'X]X [fck '9DGVmcj Yf &\$ı k\]'Y [fck]b['a Uf_Yhg\UfY]b Yj YfmcbY'cZci f`a U'cf WhY[cf]Yg"Gc]Z='cc_Unci f`dYfZcfa UbW`]b`h\Y ei UfhYfžk YfffY Yl YWh]b[j Yfgi g'h\Y'd\Ub'k Y`U]X'ci h]b'h\Y VY[]bb]b['cZh\YmYUf"K YfffYgYY]b['Uj Yfmghfcb[fYgdcbgY hc ci f`ghcfY fYa cXY`g"Ci f`bYk 'ga U``Zcfa Ung'UfY'dYfZcfa]b[j Yfmk Y``]b YUW\UbXYj Yfma Uf_Yh'K Y Wbh]bi Yhc Xf]j Yj Yfmghfcb['dYfZcfa UbW'k]h\ ci f'bYk 'ck b VfUbXg"5bX'h\Y]bj Ygha Ybhgik YfffY'a U_]b[jb ci f`hYUa 'UfY'Xf]j]b[Yl Wdh]cbU 'fYgdcbgYg'Zfca 'h\Y[i Yght'Gc 'Ug'k Y`cc_Uh ci f'dYfZcfa UbW']b h\Yei UfhYfzk YfffY'i Yl dYWhX'hc VY'UbX'k YfffY gYhi d'k Y``ZcfUj Yfmghfcb['\c`]XUmgyfUgcb"7Uh\n8

Wig"Gc GYth žugik Y'guJXžk Y'Yl dYWhuga U``futh' XYWJbY]b th Y'Zci fth ei Ufth'f":]fghcZZk Ugik Y'Yl dYWhU) i Wła džgc k Y'g\ci `X'gtufth th YfY"5bX'th Yb 'Uga U``futh' XYWJbY]b th Y'ei Ufth'f"5bX'Ugnci 'guJXžk Y'dc]bttX'tc!! k Y'Yl dYWhWbhjbi YX'dfYggi fY]b [fcgg;a Uf[]bžVi h bchtc'th Y'gula Y'Yl hYbhk Y'gulk]b E' "H\YV][[YghX]ZYfYbW]gci f!! k \]'Yk Y'gt]` Yl dYWh[fYUngu'Ygžk Y'cV]]ci gmt'fYuXmubhjWduth'th Y a]l 'th Uhk Yfi VY'gYY]b[]b h UhVi gjbYggž f gh`]_Yk Y'XJX"UghmYUffgiZci fth ei Ufth'f"5bX'k Yfi 'gYY'gtfcb['X][]ht 'gu'Yg^]_Yk Y'k ci `XfjiY'gYYb gtfcb['X][]ht 'gu'Yg"UghmYUffgiZci fth ei Ufth'fžgc'th Y'mYufl cj Yfi mYuf Wlub[Yg'UfY'U^]hthY"YggžUgnci Wlb]a U[]bY"5bX'th Yb^Ughmžk YfffY a cj YX'U`ch!! ffYW]j YX'U`ch'ubX'a cj YX'U`ch']bj Ybhcfm]b th Y'th]fX'ei Ufth'f]b UbhjWjdUthjcb cZth Y'Zci fth ei Ufth'fžUbX'gc'k Y k ci `XYl dYWhhcgy Wtghthc bchVY'Ugigtfcb["

C_Unžih\Unfig\Y`dZi``"5bX'h\Yb`^i ghž6f]Ubžnati `\][\`][\hYX'U'bi a VYf`cZdcg]hjj YgždUfh]W`Uf`mcb'h\Y`gU'Yg`]bY'UbX'h\YfY'UfY'WWUf`mWoghi UW\]Yj Y'h\Unžf][\hžUbX'Xf]j Y'h\Un\][\Yf`g\UfY'h\Unnati fffY'gYY]b["'Gc WWb'nati ^f gh\Y`d'i gVYHYf'i bXYfgHUbX'gca Y'cZh\Y']b]hjUW\]Yj					

BCJ 9A 69F %\$ z &\$ % # %\$\$DA ; A Hz E ' &\$ % HUf[Yh7cfd 9Ufb]b[g7U` cZhYb h\ygY Wzbgi a Yfg'UfY UMil U`mWccg]b[hc'i gY'8f]j Y! I d'cf'G\]dhB'5bX WUb mci []j Y'i g'U'gYbgY'cZ\ck a UbmcZh\ygY'dYcd`Y'UfY'bck Wybrca Yfg3'Cf'UfYth\YmYl]gh]b[Wybrca Yfg3'5fY'noi '[Yhh]b['dYcd'Y'k\c'bcfa U`ma U_Y'&hf]dg'hc'HUf[Yh'UmYUf'Xc]b['U'%h\cf'%h\3'Cf h\YmUfYXc]b[~]_Ya cfY%h\ cf%h\ hf]dž(YI hfUhf]dgžVYVVI gYh\YnffiYbck ii g]b[G\]dh3

BCJ 9A 69F &\$ž&\$% #%\$\$DA; A HžE' &\$% HUf[Yh7cfd 9Ufb]b[g7U`

cZYfh,YZi ``gi]hYcZZi Zj`a Ybhcdh]cbgzk Yh,]b_[i Yghg'UfY [c]b[hc WccgY'gca YcZh\cgY'h\Un'UfY'U^]hhYV]ha cfY Wdbj Yb]Ybhzh\YmWb Wda YVmci f'ghcfYg'UbX'h\YYWdbca]Wg'UfY VYhhYf"'Gc'h\UnfigicbY"'6i h!! 'gc'cbY]gk Yfi 'gYY'h\YmYUf! cj Yf! mYUf X][]hU [fck h\]gbfhiei]hYUg V]['UW\Ub[Yh\Uhk YffYYl dYWf]b[]b h\YZci ff\ ei UfhYf"'6i ha cfY]a dcfHUbhnzk Yff 'gh]` 'gYY'h\cgY'a YfW.]b]hJUh] Yg'UbX'k Y'UfY'ghUfh]b[hc gYY'gca Y'cZh\cgYzh\YWghcZ[ccXg'gc`XzWda]b['h\fci [\h\YfY]b h\YZci ff\ ei UfhYf"'Gc'h\cgY'UfY'h\YV][[YghWkUb[Yg"5bX'h\Yb`Ughnz h\YUa ci bhcZ]bj Ybhcfn'k Y'a cj YX]b E' "'CVj]ci g`nzik YfffY\YbX'fYUbX'fYUXmZcf'h\Y\c`]XUngzWda Y'g\cd'UbX'g\cd'cZhYb']b HUf[Yh''Gc'k YfffY | c]b[hc`\Uj Y'UfYU`m[ccX'Zci ff\ ei UfhYf'UbX\c`]XUnd

5bXX]X7\]bU'ltUf]ZZg'd`UmUbmfc`Y]bVf]b[]b[]b'acfY]bjYbhcfm]b'h\Y'h\]fX'eiUfhYf3'5bX'aUnWY'nciWti`X'idXUhY'ig'cb\ck'nciffYh\]b_]b['UvcihltUf]ZZg'Zcf'h\Y'Zcifh\'eiUfhYf'UbX'Zcf'bYIhmYUf"

Wyg"@/ha YghufhzFcVV]Y"K YWYufmk YfY'd`ubb]b[k Y``U\YUX'zcf'Uj Yfmghfcb['Zci fh\ ei UfhYf"K Yk UbhYX'hc'a U_Y'gi fYk Y\UX'h\Y]bj Ybhcfm]b ci f'gnghYa 'hc'a YYhh\Y'j Yfmghfcb['XYa UbX'k YffY'Ubh]MdUh]b['Zcf'h\Y'Zci fh\ ei UfhYf"'5bX'h\YfYfgifYU`mbc'i dXUhY'cb'h\Y cj YfU`'hUf]ZZfcbh''K YWbh]bi Y'hc'k UhW\]hyUw\"UbX'Yj YfmXUnz\"Ug`=_bck 'nci 'Xc"'5bX'k YffY'cc_]b['Uhk\Uh'Yj Yfgk YWb di ```hc'a U_Y gi fY'k Ya]b]a]nY'h\Y']a dUMiZcf'ci f'[i Ygh''Gc'k Yfi`k UhW\]hj YfmWfYZ ``m''CVj]ci g'nz]hfgi'Uj YfmZi]X'hcd]Wf][\hbck "6i hci f'ZcWg]gcb Yl YWh]b[]b 'h\Y'Zci fh\ ei UfhYf"5bX'k YfjiY[chh\Y]bj Ybhcfm'UbX'h\Yd'Ubg]b d`UW'hc'a U_Y'gi fY'h\]g]g'Uj Yfmghfcb['Zci fh\ ei UfhYf'Zcf HUf[Yh'

H\Y'bYl hei Ygh]cb Wta Yg'Zfca '8Uj]X'GW(]W_k]h\ '7cbgi a Yf'9X[YFYgYUfW\"

6f]UbžUWi d'YcZh]a Yg']b'nci f']b]h]U'X]gWgg]cb'UbX'h\YbYj Yb']b'E/5žnci fffY'hU_]b['UVci hh\Yj YfmYUf'mghU[YgcZh\YgY']bj Ygha Ybhg h\Uhi\\Y Wbgi a Yf']g'Yb'cn]b['k]h\ Wkc]Wgžk]h\ a YfW\UbX]g]b['zXY']j YfmWkc]WgžYhWhYfU"6i h'=['i Yggž]Znci "cc_'Uhi\\Y\]grcfmcZfYhU]'ž cZhYbh]a Ygžh\]g\][\"Yj Y'cZ]bj Ygha Ybh]ga UXY'k\Yb'h\YfYfigik YU_Yf'a U'cf'd'UmYfg'h\Uhinci Wb'gcfhcZZ]b]g\ cZZUbX Yb'cm'UVYht\f a Uf[']b'cj Yf'U'cb['Yf'dYf]cX'cZh]a Y"<ck Xc'nci 'h\]b_'UVci hi\Uh'cb[!hYfa 'UgdYWicZh\Y'gdYbX]b[Wfj Yž[']j Yb'h\Y WdUV]']h]Yg'UbX'h\Y Wfa dYhlh]cb'VYhk YYb'a U'cf'd'UmYfgž]bWi X]b['nci fqY'Z3

K Y`ž]b gca Y'k Ungžnoi fjiY'Ubgk YfYX'h\Y'ei Ygh]cb Zcfa Y"K YWfHU]b`m\Uj YVYYb'HU_]b[ZcfgYj YfU mYUfg'bck 'UVci hth\Y'cddcffi b]h]Yg h\Uh\UfY]b'h\Ya Uf_YhUg'a UbmcZci f'Wda dYh]hcfgg\f]b_cf^]ei]XUhY'UbX'[c'ci hcZVi g]bYgg"5bX'k Y'h\]b_h\YfYfgjg]nUV'Y'a Uf_Yhg\UfY cddcffi b]h]Yg'Ug'k YWbh]bi Y'hc'gYY'h\Y'fUh]cbU']nUh]cb'cZh\Y'fYHU]``UbXgWdY"6i hth\Y']bj Ygha Ybhg'k YfffYa U_]b['UfY'gh]``]b'h\Y'j YfmYUf'm gHU[Yg''K \]'Y]hZYY'g`]_Y'k YfjiYVYYb'HU_]b['ZcfmYUfg'Uvci htfYa cXY']b['ghcfYgzh\Y'ZUMhcZh\Y'a UthYf]gz'cj Yf'h\Y`UghWdi d'Y'cZmYUfgz

BCJ 9A 69F '&\$z\&\$% '#'\\$\$DA '; A Hz'E' '\&\$\% 'HUf[Yh7cfd '9Ufb]b[g'7U`

=[iYgg/hcWdbh]biYh\Uhz[ccX^iW_]b'h\Y'U^i]adcfhUbhXf]jY'ghUfh]b["""
H/Ub_'nci "
H\Ub_'nci "
HNY'bYI hiei Ygh]cb'Wda Yg'Zfca '9Xk UfX'Mfi a U'k]hN'?Ynn6UbW7Ud]hU`A Uf_Yhg''
=_bck 'h\Unicb 'h\Y'gYW&bX'ei UfhYfWi`žnoi 'hU_YX'UVci hVY]b[``][\hcb]bj Ybhcfm'iCVj]ci g`nnYbXYX']b`UX]ZZYfYbh]bj Ybhcfmdcg]h]cb`]b'h\Y h\]fX'ei UfhYf"K YfY'noi 'g\cfhcZ]bj Ybhcfm]bhfU!ei UfhYf]b'h\Y'h\]fX'ei UfhYf3'5bX'Xc'noi 'h\]b_'h\Uh]a dUMhYX'gU'Yg3'5bX'h\Yb 'gYW&bXžnoi fjY'hU_YX'U`chUVci h\ck 'gca Y'cZh\YgY'i fVUb 'ghcfYg'UfY\Y'd]b['noi 'fYUW'U'bYk W&bgi a Yf"'7Ub noi '[]j Y'i g'gca Y W&cf'cb'h\Y dfcZ]hUY]]mrcf'h\Y'hYbXg'noi ffY'gYY]b['cb'gca Y'cZh\YgY''cWh]cbg3
A UnivY =fi ghUfhzi]Z]hfigic_Unzi9Xzk]h\ h\ Y\ bYk iga U`Zcfa Ung''5bXh\ Yb >c\bza UnivYz\Wb 'UXX]bhc h\ Y]bj Ybhcfmei Ygh]cb''Gc cb iga U`Zcfa Ung''7bXh\ Yb >c\bza UnivYz\Wb 'UXX]bhc h\ Y]bj Ybhcfmei Ygh]cb''Gc cb iga U`Zcfa Ungin\graph\univ\gz\ZfghcZzk Y'fYU`m]_Yh\Uhk YfffY\UvYhc 'UWwgg'[i Yghgh\Uh\\Uj Ybffi\Ux\Uwwgghc 'HUf[Yh]b h\ YdUght'5bXigc h\Uh\\Ug\YYhb 'H\ Ym\Uj Y[fYUhgU\YgdfcXi Wfj]]mziUgik Y'fYzyfYbWX]b't\ Y\Wff]Z]WK Y\Wbhjbi Y'hc"_Yik\Uhk YfffYgYY]b['ci hcZh\ Y'ga U``ghcfYg''H\ Ym\Uj Y'[fYUhgU\YgdfcXi Wfj]]mziUgik Y'fYzyfYbWX]b't\ Y\Wf\ YUf]Yf''5bXik Y'Xc'gYY'fYU`m[ccX'fYh fbg''Gc'k Yfi Wbhjbi Y'hc'gYY'h\Uh''\Nci fi gYY'i g\Wbhjbi Y'hc'cdYb'bYk 'ga U`!Zcfa Ung''
Cb`]bj Ybhcfnžk Y`\Uj Y`ZY`h[ccX`UVci h]bj YbhcfmfYU`mth\Yk \c`Y`mYUf``cb[`UVci hk \YfY`k YfjiY`VYYb`cb`]bj Ybhcfm"H\YfYfgjVYYb`gca Y Vi g]bYggYg'k YfjiY`W\UgYX`]bhcž``]_Y`Hcngžk Y`\Uj Y`U[[fYgg]j Y`mW\UgYX`]bhc/UbX`6UVnžk \]W\`\Uj Y`h\Y`fYgi `hcZk \Uhfg`[c]b[`cb`]b`h\Y a Uf_Yhd`UW`h\YfY'''6i h'=k ci `XbffiXYgWf]VY`ci f`]bj YbhcfmYj Yf`Ug`][\H'`=h\]b_k Y`k YfY`k Y``dcg]h]cbYX`Uhh\Y`YbX`cZgYWbX`ei UffhYf''K Y ZYY`fYU`m[ccX`UVci hci f`dcg]h]cb`f][\hbck "'K Y`_bYk k Y`k ci `X`dYU_]bj Ybhcf]Yg`fY`Uh]j Y`mYUf`nž[]j Yb`k \Yb`6`UW_: f]XUmZU`g`h\]gmYUf'' 5bX`cZWti fgYžnci `gUk h\Uhcb`ci f`h\]fX`ei UffhYf`VU`UbW`g\YYh'6i hcj YfU`žk Y`ZYY`fYU`m[ccX`UVci hk \YfY`k YfjiYVYYb`dcg]h]cbYX`cb]bj Ybhcfmth\fci [\ci hh\Y`mYUf''
5bX]ZkY[cVUW_hch\YbYk ga U`Zcfa Ungz=h\]b_]hfgj]a dcfhUbhhcdc]bhci hzh\]g]gU`ck]b[i ghcfYUW\U[i Yghh\Uhz]bh\YdUghzkY\UXbffivYYbUV`YhcgYfjY"Gck\Ybnoci h\YbWbhei UfhYfUbXUddfcl]a UhYm*\$ VdgcZfYjYbi YWbhf]Vi hYXVmh\YgYbYk ga U`Zcfa Ungzh\Uhfg`Uf[Ym]bVfYa YbHJ"H\YgYUfYbY][\Vcf\ccXgUbXWhWa Ybhgk\YfYkY\UJYbffivYYbdUfhjVfdUh]b[VYZcfY"=hgiU[i Yghh\Uhk UgbffiUV`Yhcg\cdk]h\HUf[YhcbUfY[i`UfVUg]g"Gcbchcb`mUfYh\YmUfYUXmWbhf]Vi h]b[hcci ffYjYbi Yz]hfgcdYb]b[i d'UXccfZcfUbYk [i Yghhcg\cdUhHUf[YhhUf]bf]Vh\fczk\UhyffyvYbjYfbWXz`\UgVYYbjYfmdcg]hjY"K YfffYgYY]b[jbVffYX]V`YdfcXi Whjj]mci hcZh\YgYghcfYgzUbXkYffYUW\]b[U[i Ygh]bbY][\Vcf\ccXgk\YfYkYfjiYbYjYfVda d'YhYXVYZcfY"
HNY bYI hei Ygh]cb Wda YgʻZfca 'DYhYfʻ6YbYX]Mrik]h\ '6U]fX"
si ghtc VlfWW VUW_ei]W_mcb th.Y [fcgg'a Uf[]b"H\Y'Z \Z]\^a YbhWtghdfYggi fYgz=[i YggzZfca 'X][]hU]b th.Y th.]fX ei UfhYfz=a YUbzguZY tc Uggi a Y'th.Uhth.Ymk YfY U^]hhYa cfY th.Ub tk \Uhnoti 'guk 'gYei Ybh]U'!! 'cf']b th.Y th.]fX ei UfhYfzk \]W =th.]b_th.]fX ei UfhYfk Ug'Ufci bX*\$ VUg]g'dc]bhg''=g]hZU]f'tc 'Uggi a Y']hk Ug'a cfY'th.Ub th.Ut3

BCJ 9A 69F &\$ z &\$ % # % \$ \$ DA ; A Hz E ' &\$ % HUf[Yh7cfd 9Ufb]b[g7U`

Yj YfnæbY'VY'U'dUfhcZh\Y'fY'Uh]cbg\]d'k]h\ 'HUf[Yh''Gc'k YfffY'Yl V**]**hYX'UVci hk \YfY'h\Uhfig'[c]b["K Yff Wtbh]bi Y'hc'hYgh'h\Uhi\]g'bYl hmYUf" 6i h'U``cZh\Y']bX]Wh]cbg'UfY'j Yfnžij Yfmdcg]hjj Y"K YfffY'gYY]b['fYU`m[ccX'g][b!i dg'UbX'Yb[U[Ya Ybhk]h\ h\Y'FYX'dfc[fUa"

>c\bžnoti k Ubhhc k fUd h\]gi d k]h\ Ub i dXUhY cb G\]dh3

Wig'K]h G\]dhik YfYa U]b fYU`miYl VJHYXifYU`mdfci XcZ\ck h\YhYua \UggWYXh\Unhthci [\ci hth]gmYUf"H\Ym\UjY!! k\YffY]b cj Yf 8) \$ a Uf_Yhgbck]b Uj Yfmg\cfhUa ci bhcZhja Y"K YWbhjbi Yhc gYYj Yfmghfcb[fYgdcbgYZfca Wbgi a Yfg"=h\]b_h\Ja Yhf]W=cc_Uh h\Uh[Yhga Ya cghYl VJHYXi]Znci `cc_Uha Uhi fYa Uf_Yhgigc a Uf_Yhgih\Uh\Uj YVYYb cdYb Zcf'cj Yf'UmYUfizgh]` Wbhjbi Yhc gYY Hf]dY!X][]h [fck h\]b gUYgi]b; A J "Gc [i Yghg Wbhjbi Yhc Yb[U[YXa cfY'UbXa cfYžYj Yb]b a Uf_Yhgk\YfY'k YfjiYVYYb h\YfY'U`cb[hja Y"H\Ych\Yf h\]b[\= \ft X\UXXi; fY[zhc [Yhhc nci f'ei Ygh]cb]gih\Y]a dUMfcb X][]hU`[fck h\]gfY`Uhj Y`ma cXYghVYWi gY'k YffY'bchfYdcfh]b[; A J zk YffY cb`mfYdcfh]b[`ci f'fYj Ybi Yzk \]WzcZWti fgYz]gei]hYa cXYghfY`Uhj Y`nc'h\Y; A 7!!; A J gUYg'h\Uh[c'h\fci [\ G\]dh'Yc'h\Y]a dUMfh\YfY gfY`Uhj Y`ma cXYghzVi hk YffYj YfmYl VJHYX'k]h\ G\]dh'UbX'h\Ycddcfhi b]mbck 'Ug'k YVY[]b hYgh]b[G\]dhXY`] YffYgcb hUf[YhWa 'UbX'h\Y cddcfhi b]mbck 'Ug'k YVY[]b hYgh]b[G\]dhXY`] YffYgcb hUf[YhWa 'UbX'h\Y cddcfhi b]mbck 'Ug'k YVY[]b hYgh]b[G\]dhXY`] YffYgcb hUf[YhWa 'UbX'h\Y cddcfhi b]mbck 'Ug'k YVY[]b hYgh]b[hhYfhYlf"

Z=Wi `Xž=`cj Y^g ghUZc``ck!i d'cb'h\uh" i gh[]j Yb'h\YghfYb[h\]b'hfUZJWZ\Uj Y`nci [i ngvYYb'h\]b_]b['Uvci hk Ungihc'a cbYhjnY'h\Uh'HUZJW k]h\X][]hu`UXj Yfhjg]b[ž]b'dUfhjWv`Ufž^gh[]j Yb'k \Uh?fc[Yffgihfm]b['hc'a cj Y]b'h\UhX]fYWnjcb/5a UncbžWfflU]b`nžk]h\~+V]``]cb'cZ UXj Yfhjg]b['fYj Ybi Y" < ck 'UfY'nci [i ngih\]b_]b['Uvci hi g]b['U``h\UhXUhU'UbX'hfUZ]Wh\Uhnci `\Uj Y'UbX'a UmVY'ci hg]XY'h\Y'hfUX]h]cbU Uj Ybi Yg3

; fY[ž]hfigigca Yh\]b[k YfffYih]b_]b['UVci hYUWk'UbX'Yj YfmXUm'i5bX']hdfcVUV`m`YUXg'i g'hc'k fUd'i d'hcXUm'UbX']bj]hY'U``cZnoi 'hc'`c]b'i g]b h\Y'gdf]b['Zcf'ci f'i dXUhYX':]bUbVJJU '7ca a i b]hm'8Um'iGc']hfigigca Yh\]b['h\Unk YfffY'j YfmZcWgYX'cbžWbh]bi Y'hc'Vi]'X``cntu'hm'k]h\'ci f [i Ygh'i

6i hZcftcXUnži=th]b_žcdYfUncfžk YfffY'[c]b['tc'k fUd'i d'ci f'th]fX'ei UfftYfWr`'UbX']bj]thYj YfmcbY'tc'c]b'i g'U[U]b']b'thY'gdf]b["'Gc'th\Ub_nti"

H.ca gcb F Yi Hrfg l'Ygrlfj Ygrlx Y fj[\nhc a U_Y Wub[Ygrlc XcWa Ybrgz Wibhlrbhizcf ch, Yf jb Zcfa Unjcb icb th, ligk W gjhl' k jik ci hcV j] Unjcb ic bchjZnubmdYfgcb cZg W Wub[Ygrlc XcWa Ybrgz Wibhlrbhizcf ch, Yf jb Zcfa Unjcb icb th, ligk W gjhl' k jik ci hcV j] Unjcb ic bchjZnubmdYfgcb cZg W Wub[Ygrlc XcWa Ybrgz Wibhlrbhizcf ch, Yf jb Zcfa Unjcb icb th, ligk W gjhl' k jik ci hcV j] Unjcb ic bchjZnubmdYfgcb cZg W Wub[Ygrlc XcWa Ybrgz Wibhlrbhizcf ch, Yf jb Zcfa Unjcb icb th, ligk W gjhl' k jik ci hcV j] Unjcb ic bchjZnubmdYfgcb cZg W Wub[Ygrlc XcWa Ybrgz Wibhlrbhizcf ch, Yf jb Zcfa Unjcb icb th, ligk W gjhl' k jik ci hcV j] Unjcb icb bchjZnubmdYfgcb cZg W Wub[Ygrlc XcWa Ybrgz Wibhlrbhizcf ch, Yf jb Zcfa Unjcb icb th, ligk W gjhl' k jik ci hcV j] Unjcb icb bchjZnubmdYfgcb cZg W Wub[Ygrlc XcWa Ybrgz Wibhlrbhizcf ch, Yf jb Zcfa Unjcb icb th, ligk W gjhl' k jik ci hcV j] Unjcb icb bchjZnubmdYfgcb cZg W Wub[Ygrlc XcWa Ybrgz Wibhlrbhizcf ch, Yf jb Zcfa Unjcb icb th, light W gjhl' k jik ci hcV jj W jb Zcfa Unjcb icb icb za W jb Zcfa Unjcb icb za W jb Zcfa Unjcb

+b h.Y WtbZfYbW WTgi dcb k.\]W. 9j Ybh6fjYzgufY VugYXzwa dubjYga Uma U_YdfcYMgbgcfch.YfZcfk UfXl cc_]b[gtuh'a YbhgfY[UfX]b[Uj UfjYmcZ]h'a g"Gi W. Zcfk UfXl cc_]b[gtuh'a YbhgUfY VugYX i dcb WffYbhYl dVMuhjcbgubX]bj cj Yfjg_gubXi bWffuJbi}yg"5\M U rYg 'tga UmYjZyfa UhYfjU'mZca hkcg/gtuh'x]b UbmZcfk UfXl cc_]b[gtuh'a YbhVugYX cb Ubi a VYfcZja dcffubhZMcfgubxflg_gz k.\]W UfY'a cfY gdVMgW*mjXYbhjZfyX]b hkY Wa dubjYgfa cghfYWbhG97 Zj]b[g"5'hkci [.\ hkYWa dubjYga Um]bXjWhYubXVY]bj YhkuhhkYuggi a dhjcbgi bXYfmjb[hkYZcfk UfXl cc_]b[gtuh'a YbhgufY fYUgcbUYYzUbmcZh,YUgbi a dhjcbgi wa 'Xdfcj Y]bUwYfUhYcf]bwffYwfubXzh\yfYZcfYzh\yfYwb VYbc Uggi fUbW hkuhkYf\g' i'gWbh'a d'Uh'X]b hkYZcfk UfXl 'cc_]b[gtuh'a Ybhgk]' VYfYU]hYX"

H: 9-8: CFA 5H:CB 7CBH5:B98 :B 9J 9BH6F :9. GF 9. @97HGH:CA GCB F 9I H9F Gf6GI 6:97HJ 97CB89BG98 D5F5D:CF5G9C: H: 95DD@356@97CA D5BM667CB: 9F9B7975@5B8 H: 9F9A 5M 69A 5H9F :5@9F FCF C2CA :4.6. GCB E3CT : B577I F57-9G-B H: 9F9DCFHB: 10: H: 9GI 6GH5B79C: H: 97CB: 9F9B7975@60** B B C K 5M8C9GH:CA GCB F 9I H9F GCF II: 95DD@356@9 7CA D5BM5GGI A 95BMF 9GDCBG-6:eHM CF 5BMBJ 9GHA 9BHCF 10: H: 97.6. B97-6:CBG B4 58965G981 DCB H: 9F8 DFCJ :4898 CB H: 4GK 96 G4F9CF :8 5BMBJ 9GHA 9BHCF 10: H: 97. CBF G5F 9 58J 498 HC F 9J :9K II: 9F9DD@356@97CA D5BM667CB: 9F9B7975@0+G9@ 5B8 II: 95DD@356@97CA D5BM6G97: :@B; G69: CF9A 57: B; 5BMBJ 9GHA 9BHCF 10: H: 9F897-6:CBG* | &\$% H: NCa qcb FYI Mfg*5**F][\ngFYqff]YX**

