



COMD5004

7`]a UhY'7\Ub[Y'5XUdhUh]cb7'8Yj Y`cda Ybh

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GWCC``CZGCWJU`GWJYbWYg`'#'' BGK '5fng'UbX'GCWJU`GWJYbWYg

7ci fgY[·]8YHJ]`g

7 fYX]h Dc]bhg ***

Gi a a UfmcZh\Y'7 ci fgY

< Uj Y'mci 'Yj Yf'k cbXYfYX'\ck 'W]a UHY 'W\Ub[Y'UZYWg'h\Y'`]j Yg'UbX'`]j Y`]\ccXg'cZhY'dccfYghdYcd`Y`]b XYj Y'cd]b['Wci blf]Yg3'H\]g'Wci fgY'YI dcgYg'mci 'hc '_Ymh\Ya Yg']b'h\Y'W]a UHY 'W\Ub[Y'UXUdhUh]cb'UbX]bhYfbUh]cbU`XYj Y'cda YbhXYVUHY'UbX'YbUV'Yg'mci 'hc 'Wf]h]WU``mi bXYfgHUbX'h\Y'W]a UHY 'W\Ub[Y'UbX XYj Y'cda Ybh]ggi Yg'UZZYWh]b['h\Y'WUdUW]hmUbX'k Y``!VY]b['cZ`cWU``Wca a i b]h]Yg']b'5i glfU`]U'UbX XYj Y'cd]b['Wci blf]Yg''H\Y'Wci fgY'YI Ua]bYg'\ck '`cWU``Yj Y`fYgdcbgYg'hc 'W]a UHY'W\Ub[Y'UfY'g\UdYX'Vm a i `h]!'Yj Y``W]a UHY'[cj YfbUbWY'dfcWyggYgž'YI dcgYg']bYei]h]Yg']b'UXUdhUh]cb'fYgdcbgYg'hc 'W]a UHY'W\Ub[Y]a dUWhgž'UbX'YI d`cfYg`\ck 'h\YgY'UXUdhUh]cbg'WUb'VYHYf'fYgdcbX'h\Y'bYYXg'cZdccf'UbX X]gUXj UbHU[YX'Wca a i b]h]Yg

7cifgY@YUfb]b[CiHWcaYg

- %" →YbhjZmUbX`YI d`U]b`h`Y`fUb[Y`cZWcbWrdhgždc`]WjYg`UbX`dfUWjWr`cZW]a UhY`W\Ub[Y`UXUdhUhjcb`]b fY`Uhjcb`hc`XYj Y`cda Ybhighi X]Yg
- &" 7 f]hjWU``mUbU^{*}mgY W]a UhY W.Ub[Y UXUdhUh]cb'dc`]WmUbX'dfUWjWrg']b'X]ZZrfYbhWcbhYI hg'i g]b[WUgY ghi X]Yg
- ' "DfcdcgY'dUh\kUmg'UbX'cdhjcbg'Zcf'fYXiWjb['Wcaaib]miji`bYfUV]`]miUbX'Yb\UbWjb['fYg]`]YbW ("IbXYfhU_Y'Wf]hWU`'qcWjU`'qWjYbW'fYqYUfW`UbX'UbX'UbU`mg]qž']bXYdYbXYbhmUbX']b'U'hYUa
- Ybj]fcbaYbhzUbXZfh\YfXYjY`cdfYgYUfWZ]bhYfdYfgcbU`zWcaaib]WUh]cbUbX`hYUakcf_g_]`g

HYUW]b[GHfUHY[]Yg

Dfcj]XY'U'Wf]h]WU``fYj]Yk `cZWcbWfdhg`fY`UhYX'hc`ji`bYfUV]`]hmihc'W]aUhY'W\Ub[Y'UbX'Yei]hUV`Y UXUdhUh]cb'

=b`XYj Y`cd]b[`Ub`YggUnžmci`a][\h`]_Y`hc`Ya d`cmcbY`cZh\Y`Zc``ck]b[`ghfUhY[]Yg.`UŁ`]bj c`j Yg`h\Y Udd`]WUh]cb`cZa UhYf]U``Zfca `cbY`cf`a cfY`gYa]bUfg`UbX`X]gW gg]cb`a cXi `Yg`cZh\Y`Wci fgY`]b`YI d`cf]b[`U gdYW]Z]WWcbWYdh`U``UbX`dfUWf]WU``UgdYWfzcf`VŁ`]bhY[fUhY`a UhYf]U`g`Zfca `hk c`cf`a cfY`gYa]bUfg#X]gW gg]cbg Zfca `h\Y`Wci fgY`hc`YI d`cfY`U`gdYW]Z]WdfcV`Ya `cf`]ggi Y''`H\Y`YggUmg\ci`X`XYa cbghfUhY`mci f

WcUgHU``gYHîYa Ybhgž'UbX`i fVUb]gUh]cb"``Mci `UfY`UXj]gYX`hc`Zc``ck `h\Y`Zc``ck]b[`ghYdg`]b`d`Ubb]b[`mci f dc`]Wh#d`Ubb]b[`UbU`mg]g`fYdcfh

- %" WkccgY:U:h\Ya Uh]WZcW g`fbi Wk:Ug`[YbXYfžcf'dcjYfmžg`i a gEUbX:U:Wci bhfm#fY[]cb`fbi Wk:Ug 6Ub[`UXYg\#BYdU`#5i ghfU`]UE":`H\]g`a U_Yg`mci f`hcd]Wgca Yh\]b[``]_Y`h\]g.; YbXYf`]b`W]a UhY UXUdhUh]cb`dc`]WnUbX:d`Ubb]b[`]b`6Ub[`UXYg\.:U`Wf]h]WU``UbU`mg]g":Mci `WUb`ZfUa Y`mci f`hcd]WZcf mci f`Wkc]WY`cZfY[]cb`UbX:h\Ya Y`]b`U`g]a]`Uf`k Um";
- &" Wc``YWiUbX`UbU`mgY`XUHU`UbX`cf[Ub]gY`mcif`fYdcfhUWWcfX]b[`hc`h\Y`Zc``ck]b[`cih]bY.`
- % #bhfcXi Whjcb!!gUmk \Uhimci 'UfY'[c]b['hc'gUm/XYZ]bY'h\Y'cV'YW]j Yg'cZmci f'YggUmift %\$\$'k cfXgŁ" Mci 'Zcfa i `UhY'U'gYhcZU]a g#cV'YW]j Yg'UbX'ghfi Whi fY'h\Y'fYdcfhUWVcfX]b['hc'h\Y']XYUg'mci 'k]` dfYgYbh''Mci 'a Um`]_Y'hc'YI dUbX'fbchhc'fYdYUhŁ'h\Y']XYUg'UbX'Uf[i a Ybhg'dfYgYbhYX']b 5gg][ba Ybh'%'
- &"; YbYfU`WcbhYl hcZhY'fY[]cb'UbX'hY'hYa Y'cZmci f'W\c]WY'!'dfcj]XY'[YbYfU`WcbhYl h'U`]bZcfa Uh]cbz'hYbXgz']ggi Yg'fY`UhYX'hc'h\Y'h\Ya Y'UbX'fY[]cbg'UbX'h\Y'bUhi fY'cZW]a UhY'W\U``Yb[Y fr' \$\$`k cfXgŁ
- ' " H\Y'dc`]WmUbX'd`Ubb]b['XmbUa]Wg'ffd`Um]b['Z]Y`XftE! a Ud'ci hUWcfgž'dc`]W]Ygž'd`Ubgž']bWi X]b[h\Y]f`\]ghcf]Ygž`\ck 'Zcfa i `UhYXž_Ym`\][\`][\hg'cZh\Y'd`Ubg#dc`]W]Yg`ff , \$\$`k cfXgE"'H\Y'i gY`cZ fY`Yj UbhXUhU'hUYYgž'Z][i fYgža Udg`UbX'ch\Yf`Yj]XYbWY'UfY`\Y`dZ ``hc`XYj Y`cd`UbX'dfYgYbhh\Y WUgY`]b`U`a cfY`Wcbj]bW]b[`a UbbYf"
- ("5bU`mg]g`cZ'h\Y``]b_g`VYłkYYb`dc`]WmZfUaYkcf_g`#d`Ubg`f]bWiX]b[`'h\Y`d`Um]b[`'Z]Y`XŁ`cb`h\Y UXUdHUh]cb`dfUWf]WYg`fcf`]b`YIUWYfVUh]b[`ji`bYfUV]`]mtž`]bWiX]b[`'Ub`UbU`mg]g`cZW,U``Yb[Yg`UbX cddcfhib]h]Yg`WfYUhYX`Vmih\Y`dc`]Wm#d`Ubg`Zcf`ZU]f`UbX`Yei]HUV`Y`UXUdHUh]cb`fh`&\$\$`k cfXgŁ"
-) " 7 cbWi g]cb!!]XYbh]Zma U]b'dc]bhg'UVci h\ck 'dc`]Wm#d`Ubb]b['\Uj Y'UZZYWYX'UXUdhUh]cbž'UbX k \Uh`Yggcbg'WUb'VY'`YUfbh'Zica 'h\Y'WUgY#\Ya Y'fh'%\$\$'k cfXgŁ
- *"6]V`]c[fUd\m
- +"9bXbchYg

		FYUX]b[ž:dfYdUfUh]cbž:UbX`[fcid:kcf_`Wcbh]biY`]b dfYdUfUh]cb:Zcf`]bhYbg]jY`XUm"
K YY_`).`%`>i `m!`)`>i `m	=bHYbg]jY	(`>i`m`!`BC`7@5GG`VihighiXYbhi[fcidg`kcf_ hc[Yh\Yf`hc`dfYdUfY`Zcf`h\Y`+bhYbg]jY`XUmicb`*`>i`m"
		≠bhYbg]j Y`8Um! **`>i `m&\$%-`fGUhi fXUmŁ
		H]a Y.'-"" \$!("" \$da '
		J Ybi Y. A cfj Yb 6fck b'; *
		K Y YI Ua]bY '_Ym]ggi Yg cZW]a UHY W Ub[Y UXUdHUHcb ']b '#bX]U"'H Y ']bHYbg]j Y XUm]g X]j]XY X ']bhc h fYY 'dUfhg" '#o 'h Y ']fghž YWi fYf 'k]```dfcj]XY 'U 'VUg]W]bHfcXi Wijcb cZh Y ']bHYbg]j Y XUmž fY!]HYfUh]b['_Ym W cbWYdhg UbX 'h Ya Yg 'UbX 'dfcj]X]b['U 'ZcW g 'Zcf 'h Y]bHYbg]j Y XUm''H Y 'g YW cbX 'dUfhik]```]bj c`j Y 'h Y Gh XYbh@YUfb]b['[fci d 'hc ']bU']gY 'h Y]f dfYgYbHUH]cb" 'H Y 'h]fX 'dUfh]g 'h Y g \Uf]b['VmH YgY [fci dg 'k \]W 'U 'gc ']bWi XY 'ei YgH]cb 'UbX 'Ubgk Yf gYgg]cbg"'H Y '8 Umk]``W cbWi XY 'VmU gi a a UfmcZ X]gW gg]cbg"''
		FZW_WeXadfZWEfgVWf>WSd[`Y9dagbeXad bdMeWfSf[a`,
		H\YaY`%E` Dcj Yfhm iUbX`W]a UhY`W\Ub[Y`UXUdhUh]cb
		H\YaY`&E YbXYf `UbX`W]a UhY`UXUdhUh]cb`
		H\YaY`' Ł ≢bX][Ybci g`dYcd`Yg `UbX`W]a UhY UXUdHUh]cb`
		H\YaY`(Ł B; Cg`UbX`ZcfY][b`U]X`] b`W]aUhY UXUdhUh]cb
		H\YaY`)Ł@cWU``[cjYfbaYbhd`Ubb]b[UbX dc`]WmZcf`ifVUbW]aUhYW\Ub[Y`UXUdHUh]cb`
K YY_`*.`, `>i `m'!`%&`>i `m	Cb`]bY`5WMjj]hm	%%`>i`m`
		@a 5'See ŽDWXWUf[a` !DWSV[`YiWW]

	FYZYWIjcb`cb`h\Y`=bHYbg]jY`XUm/WSUZ efgVW fi [^^ i dfWS %" " i adVe dWXWUf[a` S`V egT_ [ffZ[e egSdk fa _f]g\bU"g\fYgh\U4 i bgk "YXi "Ui Tk ##ž +b_ i #\$ <g'kž@a 'sfw<br="" [ee[a`="" ad="" egt_="">egT_ [ee[a` i [^^dWeg'f [` kag TW[`Y STeW f XadfZ[e eW_ [`Sdž 9ggUmXiY`cb`%&`>i`mž: f]XUm'Vm %%") - da '/egT_ [ee[a` a` '[`Wge[`Y fgd [f[` fi</g'kž@a>
K YY_`+.`%) `>i `mi!`%-`>i `m	%, `>i `m
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 $5X[Yf\ddot{z}K "B"\ddot{z}f\&\$*t: U]fbYgg`]b`UXUdHUh]cb`hc`W]a UhY`WXUb[Y.`H\Y`A +H`DfYgg"$

3`Sîke[eł

6]f_a Ubbž>OfbžUbX'?cf]bbU'HY]W\a Ub'f&\$%\$L"+bH/[fUh]b['8]gUgH/f'F]g_FYXi Whjcb'UbX'7`]a UHY'7\Ub[Y 5XUdHUh]cb.'?Ym'7\U``Yb[Yg—GWU`Ygž'?bck`YX[YžUbX'Bcfag""EgefS['ST[{fk EU[W'UW]`f&L'%+%-% ("

KYY_`)7ca a i b]hmidUfh]W]dUh]cb`]b`UXUdhUh]cb`hc`W]a UhY`WXUb[Y

5fbgh/]bžG"`f%-*-Łž5``UXXYf`cZW]h]nYb`dUfh]W]dUh]cbž>cifbU``cZ5aYf]WUb`=bgh]hihY`cZD`Ubb]b[žJc`"')ž Bc"(ždd"&%*!&&("

A U\^UVYYbžN"`UbX`G\fYgh\Už? "`? "`f&\$%%±ž7]j]WgWJYbWYžWcaaib]midUfh]WJdUh]cb`UbX`d`Ubb]b[`Zfc _bck`YX[Y!VUgYX`XYjY`cdaYbh`UbU`mg]g`cZGmXbYmAYhfcdc`]hUb`GhfUhY[mž`±bhYfbUh]cbU``>cifbU``cZ ? bck`YX[Y!6UgYX`8YjY`cdaYbhžJc`"&žBc"(ždd"(%&!('&"

5[fUk U`ž5"`UbX`;]Vgcbž7"`f‰---Łž9bWkUbha YbhUbX`8]gYbWkUbha Ybh`H\Y`Fc`Y`cZ7caaib]hm`]b BUhifU``FYgcifWY`7cbgYfjUh]cbžK cfX`8YjY`cdaYbhžjc`"&+žbc"(ždd"`*&-!*(-"

G\fYgh\Už?""?""UbX`A WA Ubi gžD"`f&\$\$, ŁžH\Y`dc`]h]Wg`cZWca a i b]hmidUfh]W]dUh]cb`]b`bUhi fU``fYgci fWY a UbU[Ya Ybhž`Yggcbg`Zfca `Wca a i b]hmiZcfYghfm]b`BYdU`ž5i ghfu`]Ub`: cfYghfmžJ c`"+½`Bc"&ždd"%) !%(*"

6fYhłź9" f&\$\$' Ł'DUfh]W]dUh]cb UbX UWWci bHUV]`]hm]b XYj Y`cda Ybha UbU[Ya Ybhź' >ci fbU``cZ8Yj Y`cda Ybh Gh X]YgžJ c`" (\$žBc" &ž&\$\$' ždd" '% &- "

7 cfbk U``ž`5"`f&\$\$, Ł'I bdUW_]b[`'DUfh]W]dUI]cb'. a cXY`gža YUb]b[g'UbX`dfUW]WYg'ž'7 ca a i b]m 8Yj Y`cda Ybh>ci fbU`žJ c`"ž`(' ž'dd"`&*-!&, ' "

=bbYgž>"`UbX`6cc\Yfž8"`f&\$\$(\±zFYZUa]b[`DiV`]WDUff]W]dUh]cb.`GlfUhY[]Yg`Zcf`h\Y`&%gh7Ybh`fmž D`Ubb]b[`H\Ycfm/`DfUW]WYžjc`"`)žbc"`(ždd"`(%-('*"

KYY_******5XUdHJhjcb*D`Ubb]b[

: i ggY`ž'<"!A "`f&\$\$+Ł"`~5XUdHUH}cb`d`Ubb]b[`Zcf`W]a UHY`VXUb[Y.`WcbVW'dhgž'UggYgga Ybh'UddfcUVXYgž'UbX _Ym`Yggcbg"~`Gi gHU]bUV]`]hm`GW}YbWY`&f&Ł`&*)!&+) "

: Yk žF "ž? "`6fck b`UbX`9"`@'`Hca d_]bg`f&\$\$+Ł"`´Di V`]WdUfh]WjdUhjcb`UbX`W]a UhY`W\Ub[Y`UXUdhUhjcb. Uj c]X]b[`'h\Y`]``i g]cb`cZ]bWi g]cb"´´7`]a UhY`Dc`]Wn`+f%L`(*!) - "

6i fhcbž == ž<i ežG "ž@]a ž6"žD]`]Zcgcj UžC "/ `GWX]ddYfž9"@'`f&\$\$&{±": fca `]a dUWg`UggYgga Ybhhc UXUdfUhcb`df]cf]h]Yg.`H\Y`g\Ud]b[`cZUXUdfUh]cb`dc`]Wh"5 {_ SfWBa {Uk} & z%()!%) - "

FYj]Yk 'cZbUł]cbU``W]a UłY 'W Ub[Y'głfUłY[mXcW a YbłgžBUł]cbU``5XUdłUł]cb'D`Ub'cZ5W]cb'fB5D5łžUbX ch\Yf'[fYm#di V`]g\YX``]łYfUłi fY`Uj U]`UV`Y`]b'h\Y`]błYfbYł'

K YY_'+````Di V`]WDc`]Wm]b'7`]a UHY'WXUb[Y'UXUdHUh]cb

@]a ž6cž9f]_U`GdUb[Yf!G]Y[Zf]YXž=Ub`6i fhcbž'9`]nUVYh、`@A U`cbYžUbX`GU`YYa i ``< i e"`&\$\$- "`"5XUdHUh]cb Dc`]Wh: fUa Yk cf_g`Zcf`7`]a UhY`7 \Ub[Y.`8Yj Y`cd]b[`GhfUhY[]YgžDc`]W]Yg`UbX`A YUgi fYg"T B8D`UbX 7 Ua Vf]X[YI b]j Yfg]mDfYgg

I fk]bž?""UbX`5"`>cfXUb`f&\$\$, Ł"`"8cYg`di V`]Wdc`]Wngi ddcfhicf`i bXYfa]bY`W]a UhY`WXUb[Y`UXUdhUh]cb3 9I d`cf]b[`dc`]Wni]bhYfd`UmUWfcgg`X]ZYfYbhgWU`Yg`cZ[cjYfbUbWY"""; `cVU``9bj]fcba YbhU``7 \Ub[Y`% fl& % \$!% %"

=b[c`Xž?"'UbX:: "'JUfcbY'f&\$%&&''''HfYUh]b['dc`]WnVfc_Yfg'gYf]ci g`m'9j]XYbWY'Zfca 'h\Y'W]a UhY'dc`]Wn''' >ci fbU``cZDi V`]W5Xa]b]ghfUh]cb'F YgYUfW\'UbX'H\Ycfm&&f&&'' %!' (*"

C \Už < "F "žDUi XY`žB"G"ž6Ub^UXYžA "F "žA WKci [U``ž7"/ 7 Ua Yfcbž>"f&\$%\$\ZH\Y`XY`]VYfUhjj Y`gWjYbhjgh]bhY[fUhjb[`gWjYbWY`UbX`dc`]hjWg`]b`ZcfYghfYgci fWY`[cj YfbUbWY`]b`BYdU`"`+b`@"; Yfa Ubž>">"F Ua]gWX / F " J Yfa U`fYXg"L'6YmcbX`h\Y`6]cd\mg]WU`. ? bck `YX[Yž7i`h fYžUbX`Dc`]hjWg`]b`5[f]W`h fY`UbX`BUh fU` F Ygci fWY`A UbU[Ya Ybh'8cfXfYW\hz<]YXY`VYf[ž@cbXcb`UbX`BYk`Ncf_.`Gdf]b[Yfž%*+!%~%"

C ^Už < 'UbX'5bXm < U```f&\$%&L'7cbZrcbh]b['7\U``Yb[Yg]b'5dd`m]b['5XUdh]jY'7c``UVcfUh] Y'5ddfcUVXYg. @Yggcbg'Zrca 'DfUWf]WYz=b.'C ^U`YhU`z'5XUdh]jY'7c``UVcfUh]jY'5ddfcUVXYg'hc'BUhifU``FYgcifWY ; cjYfbUbWY

G\fYgh\Už?"?"ŽC \Už<"//`6\UHUfU]ž6"`fBadfZUa_[`YŁž8]gUghYf`f]bŁ↑ gh]W¥g`]b`BYdU`'g`YUfh\ei U_Y

KUg\]b[hcbž87"

6ifVmžF"'>"'fYX"Ł'f%-, Łż5aŻabWdSf[`Yi[fZ@SfgdWUa`Xda`f[`Y`SfgdS^ZSISdVei[fZ'S`VŽgeWb'S``[`Y XadegefS[`STWUa__g`[f[We ; Y]gž8"`9"`UbX`5fbc`Xž7"`f‰, +ŁžAYI]Wc`7]ImiUg`gY]ga]W`UVcfUhcfm`U`ai`HjbUhjcbU``HYUa`XfUkg`Yggcbg Zfca`H\Y`%,)`HfU[YXmž3dJZ[fWUfgdWž+*fl+Łždd"+)-++"

; `cVU``9bj]fcbaYbh: UW]]mif} 9: Łf&\$\$' ŁźDWeba`V[`Yfa54_SfW5ZS`YW/9WWdSf[`Y5a_g`(fk 4W/W4[fe, 3DWh[W/aX5a_g`(fk;`[f[Sf[hWeegbbadfW/TkfZW9/aTS^7`h[da`_Wf8SU[(fkełE_S^ 9dS`feBdaYdS__W/E9Bfi#++\$Ž\$" "%ź5'gi a a UfmicZU'fYj]Yk `WUff]YX'ci hVmi9VfU\]a]Ub'9"ž;]hcb[U'G" UbX'HUjYfU'7"

; cXgVXU`_ž8"F "`f&\$\$' Łž1 fVUb`\UnUfX`a]h][Uh]cb.`WfYUh]b[`fYg]`]YbhW]h]Ygž@Sfgd6^: SI SdVe DWh[Wi ž(fl Łž dd"% *-%(' "

; fUggcžA "`f&\$\$+Ł"`5`bcfa Uhji Y`Yh\]WU``ZfUa Yk cf_`]b`W]a UhY`W\Ub[Y"`7`]a UhjW7 \Ub[Yž', %z*&&' -&(* "

; fY[cfmž>"A "ž<im/fYW\hzD"UbXFUdYfžG"7"f&\$\$(\±7)]a Uhc`c[m'H\fYUhYbYX``cgg`cZh\Y`; fYYb`UbX]WY!g\YYhz@SfgdWz(&, žd"*%*!

<YbbYggmž? "ž:]m\Uff]gž6"ž6UHYgž6"7 "ž<Ufj YmžB "ž<ck XYbžA "ž<i [\Ygž@"žGU`]b[Yfž>"žK Uff]W_žF "ž 6YW_YbžG"ž7 \Ua VYfgž@"ž7c`Ya UbžH"ž8i bb"žA "ž; fYYbž8"ž<YbXYfgcbžF "ž<cVXUm"5"ž<cY[\! ; i`XVYf[žC "ž? Ybbmž; "ž?]b[ž8"žDYbbmž; "UbX K ccXfi ZžF "f&\$\$+Ł 7 \UdHYf'%% 5i gHU`]U UbX B Yk NYU`UbX" =b. 7`]a UHY 7 \Ub[Y`&\$\$+. =a dUWfgž5XUdHUH]cb UbX J i`bYfUV]`]m" 7 cbH]Vi H]cb cZK cf_]b[;; fci d ==hc H\Y: ci ft\ 5ggYgga YbHF YdcfhcZh\Y =bHYf[cj Yfba YbHU`DUbY`cb 7`]a UHY 7 \Ub[Y"DUffmžA "@"ž 7 Ubn]Ub]žC ": "`žDU`i H]_cZz >"D"`žj Ub XYf`@]bXYbžD">"UbX`<Ubgcbž7"9"`fPXgŁž7Ua Vf]X[Y`I b]j Yfg]m DfYggž7Ua Vf]X[YžI ?"

<mXYžF "5" f&\$\$\${z5 {_ SfWDWeba`e[hW6We[Y`, 3 efgVk aXTg[V[`Ye [` i Sd_ U'[_ SfWez9/ : B GdcbzI ?"</pre>

⊕77': ci ft\ '5ggYgga YbhF Ydcfhif&\$\$+½'5 {_ SfW5ZS` YW\$" ") Ek` fZWe[e DWbadfz' =bhYf[cj Yfba YbhU` DUbY`cb'7`]a UhY '7 \Ub[Y"

? U]bUbž5"ž9\gUbž5"UbX7\ckX\ifmž<"f&\$\$*Łž8[`S^DWbadfŽEfgVka` {hW[ZaaVekefW_e SeeWee_WifHg^WdSTWYdagbebdaX[{`YS`V {hW[ZaaVSVSbfSf[a` fa U{_SfWZSISdVS`V 'a`YfWd_ U{_SfWUZS`YW[`VdagYZfbda`WSdWSeaX@I 4S`Y'SVWeZž ccXUbX5[f]W`'hfY'Cf[Ub]nUh]cb'fI5CŁcZ h\Y1b]hYXBUh]cbg'UbX8YdUfhaYbhcZ5[f]W`'hifU`'9IhYbg]cbž6Ub[`UXYg\"

? YbbmžA "UbX A YUXck WfcZhž >" fYXg"Ł f%- - - Łž B 'S`` [`Y EgefS[`ST[/[fkł F ci hYX[Yž@cbXcb"

@UmUfXž5"ž8UjciX]žG"`UbX`6UhmžG"`fYXg"Łf&\$\$%ŁžB'S``[`YXadSEgefS[`STW8gfgdWzGdcb`DfYggž @cbXcb"

A Wk Uf[ž="f%-*-lž6We[Y`i [fZ @SfgdWz8ciVYXUmžBYk Wcf_"

A YUXck gž8" < "žA YUXck gž8" @"UbX'F UbXYfgž>"f% - &Łž4Wka`V fZW>[_ [feł 7 \Y`gYU'; fYYbžBYk 'Mcf_"

BYk a UbžD"'f&\$\$(\zec{z}Gi ghU]bUV]`]miUbX'[`cVU``W]h]Ygž3gefcS{[S` B'S`` Wdz'(%f(\zec{z}dd" &+!"

DYhYfgž5" UbX A UW8 cbU Xž < "f&\$\$(ŁžG` 'aU] ['Y fZW5 W ege i [fZ 9;Eł 9GF =DfYggžF]W.a cbXž75"

D]nUffcžF"'9"ž6`U_Y`mž'9"ž'8YY>"5`f&\$\$*ŁžI fVUb`D`Ubb]b[`UbX`Dc`]Wni: UWYg`7`]a UHY`7\Ub[Yž>WSd`[`Y Xda_ GdTS` 6[eSefWde, B'S`` [`Y XadDWe[/[W] f5[f[Wel' &f(Lždd"(\$\$!(%&"

Dci bXž6UffmžG]Y[`]bXYGbUddž7mbh]UAW8ci [U``žUbX5bb6fUi bf&\$\$(Ł'AUbU[]b[BUh fU`

FYgcfi WYgʻZcfʻGi gHJ]bUVʻYʻ@j Yʻ\ccXg.ʻI b]h]b[ʻGW]YbWYʻUbXʻDUfh]W]dUh]cbʻ**"** FY[]ghYfžF"ʻf‰, +Łžʻ7UaU[fk 4Wd] WWkł Bcfh\ʻ5hUbh]Wžʻ6Yf_Y`Ym' F][bchžʻ9"`UbXʻH\ca UgžʻF"<"`f&\$\$&ŁžʿA UggʻVU`UbWYʻcZdc`Uf`]WYʻg\YYhgžʻEU[W UWž&, -ždd"%) \$&—%) \$*" GUbXYfgcbžʻ8"`f&\$\$\$Łžʻ7]h]YgžX]gUghYfgʻUbX``]j Y`]\ccXgž 9 Wa Xa dg_

3e[SbSU[X[UH[W ba[`f

>aUS^7`h[da`_Wf

Eau[Wfk S`V @SfgdS^DWeagdUWe

9 WaYdSbZ[US^DWeWSdJZ

H\YgY'UbX'a Ubm'ch\Yf'i gYZ ``~ci fbU`g'UfY'Uj U]`UV`Y'cb`]bY'h\fci [\'I BGK ``]VfUfm"

Mci 'k]``VYbYZhZfca 'VYWca]b['ZJa]`]Uf'k]h\; cc[`YGW\c`Uf'f<u>\htd.#gW\c`Uf"[cc[`Y"Wca</u>ŁUg'U_YmgYUfW\ Yb[]bY'Zcf'UWUXYa]WdiV`]WUh]cbg'UbX'fYdcfng"'Mci 'WUb'gYhid'h\Y'dfYZYfYbWYg'hc``]b_'hc'h\Y'IBGK @]VfUfmYjYb'k\Yb'mci 'UfY'bchcb'WJadig"'

; c'hc'; cc[`Y'GW\c`Uf2'gYH]b[g2``]VfUfm``]b_gžUbX'YbHYf''I b]jYfg]mcZBYk'Gci h\'K U`Yg'`]b'h\Y'VcI'Zcf "@]VfUfm".

Mci 'WUb'g][b'i d'Zcf'HUVY'cZ7cbHYbhg'fHC7E'5`Yfhg'Zfca 'h\Y'\caYdU[Yg'cZfY`Yj Ubh'ĉi fbU`gžhc'fYWY]jY Ub'Ya U]``k\YbYjYf'bYk 'Ufh]WYg'UfY'di V`]g\YX']b'h\Uh'ĉi fbU`"'>ci fbU`"k YVg]HYg'k]``cZhYb'WUffm]bZcfa Uh]cb'cb'h\Y'a cghij]Yk YX'UbX'a cghW[hYX'Ufh]WYg/h\YgY'UfY'`]_Y`mhc'VY']bHYfYgh]b['UbX'cZhYb]bZi Ybh]U``Wcbhf]Vi h]cbg"'; cc[`Y'GW\c`Uf'k]``U`gc'dc]bhmci 'hc'Ufh]WYg'h\Uh'\Uj Y'W[hYX'U'dUfh]W `Uf'Ufh]WY UbX'\YbWF'k]``VY'fY`UhYX'hc'h\Y'hcd]W

7 ci fgY 9j U`i Uh]cb UbX 8Yj Y`cda Ybh

E fgVW f XWWTSU] [e YSfZVdW bVd[aV[US^{*}k ge['YłS_a`Y afZVd_VS`eł G@EI e_k7j bVd[W UWbdaUWeež ;`Xad_S^{*}XWWTSU] S`V U'SeeŽYW VdSfW XWWTSU] SdW[_bad'S`fz 3 Td[VXegdhVk i [*TWUa`VgUfW Sdag`V fZW_[VV WaXfZWeW_WefWd fa [VW f[Xk SdNSe aXefgVW f [eegWež 3`S'ke[e aXXWWTSU] i [*['Xad_ fZW dNSea`ST WSV'gef_W f aXUagdeWUa`fW f S`V VW[hVdk i ZVdWbaee[T Wz E fgVW f XWWTSU] [e fS] W eWd[age*kł S`V Ua`f['gS^[_bdahW_W fe SdW_SVWfa fZWUagdeWTSeW [`bSdf a` egUZ XWWTSU] ž 5 Z S`YWe fa fZWUagdeWi [*TW['fdaVgUW fa egTeWcgW f UaZadfe aXefgVW fe fS] [`Y fZWUagdeWz Gi Va]gg]cb cZ5ggYgga YbhHUg_g

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

5WUXYa]W<cbYghmUbX^D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b['h\Y`k cfXg`cf`]XYUg`cZch\Yfg`UbX`dfYgYbh]b['h\Ya `Ug`mci f`ck b"`+i\WUb`hU_Y`a Ubm Zcfa gžZfca `XY`]VYfUhY`W\YUh]b['hc`UVW]XYbhU``mWcdm]b['Zfca `U`gci fWf`k]h\ci hUW_bck `YX[Ya Ybh'

IBGK '[fcidg'd`U[]Uf]ga ']bhc'h\Y'Zc``ck]b['WUhY[cf]Yg.

7 cdm]b[..i g]b['h\Y`gUa Y`cf`j Yfmig]a]`Uf`k cfXg`hc`h\Y`cf][]bU``hYI h`cf`]XYU`k]h\ci hUW_bck `YX[]b['h\Y gci fWY`cf`i g]b['ei chUh]cb`a Uf_g"`H\]g`U`gc`Udd`]Yg`hc`]a U[YgžUfhUbX`XYg][b`dfc`YWfgžUg`k Y```Ug dfYgYbhUh]cbg`k \YfY`gca YcbY`dfYgYbhg`Ubch\Yf*g`]XYUg`cf`k cfXg`k]h\ci hWfYX]h"

=ðUddfcdf]UhY`dUfUd\fUg]b[..7\Ub[]b[`U`ZYk`k cfXg`UbX`d\fUgYg`k \]`Y`a cghmfYhU]b]b[`h\Y`cf][]bU` ghfi Whi fY`UbX#cf`dfc[fYgg]cb`cZ]XYUg`cZh\Y`cf][]bU`ž`UbX`]bZcfa Uh]cb`k]h\ci hUW_bck`YX[Ya Ybh`H\]g`U`gc Udd`]Yg`]b`dfYgYbhUh]cbg`k \YfY`gca YcbY`dUfUd\fUgYg`Ubch\Yf*g`]XYUg`cf`k cfXg`k]h\ci hWfYX]hUbX`hc d]YW]b[`hc[Yh\Yf`ei chYg`UbX`dUfUd\fUgYg`]bhc`U`bYk`k \c`Yžk]h\ci hUddfcdf]UhY`fYZYfYbW]b[`"

7 c``i g]cb. 'k cf_]b['k]h 'ch Yfg'Vi hdUgg]b['cZh Y'k cf_'Ug'U'dYfgcb'g']bX]j]Xi U``k cf_"'7 c``i g]cb'U`gc]bWi XYg'dfcj]X]b['mci f'k cf_'hc'Ubch Yf'gh XYbhVYZcfY'h Y'Xi Y'XUHYžcf'Zcf'h Y'di fdcgY'cZh Ya d`U[]Uf]g]b['UhUbmh]a Yž'dUm]b['Ubch Yf'dYfgcb'hc'dYfZcfa 'Ub'UWUXYa]WhUg_žghYU`]b['cf'UVei]f]b[Ubch Yf'dYfgcb'g'UWUXYa]Wk cf_'UbX'Wcdm]b[']hž'cZYf]b['hc'Wca d`YhY'Ubch Yf'dYfgcb'g'k cf_'cf'gYY_]b[dUma YbhZcf'Wca d`Yh]b['UWUXYa]Wk cf_"

=bUddfcdf]UhY`W]hUh]cb.`7]h]b[`gcifWYg`k\]W\`\UjY`bchVYYb`fYUXžk]h\cihUW_bck`YX[]b[`h\Y`~gYWcbXUfm~ gcifWY`Zfca`k\]W\`_bck`YX[YcZh\Ya`\Ug`VYYb`cVhU]bYX"

8id`]WUh]cbffigY`Zd`U[]Uf]ga "Łigi Va]hh]b[imcifick bik cf_ži]bik \ciYicfi]bidUfhžik \YfYi]h\UgidfYj]cigim VYYbidfYdUfYXicfigi Va]hhYXiZcfiUbch\YfiUggYggaYbhicfiWcifgYiUhi BGK icfiUbch\Yfib]jYfg]hm"

7 cffYWhfYZYfYbWjb[dfUWfjWYg.

- DUfUd\fUg]b[žigi a a Uf]g]b[žiYggUmik f]h]b['UbX'h]a Yia UbU[Ya Ybh
- 5ddfoddf]Uhf~dgfr~c]BUb&ff0hf]Vihjcb~Zobfd'ffUbhr@cogZa Udd/ffUdbgf]bgWiX]b{fhYIhzUbfdb[gYgzkZcfaib]UH~cLBcK_"
 VcbVWdhg"

- i bXYfgHJbX'mci f`f][\hg`UbX'fYgdcbg]V]`]h]Yg`Ug`U`ghi XYbh'Uh'I BGK
- VY Uk UfY cZdU[]Uf]ga žWcdmf][\lbzi BGK Ghi XYbh7cXY cZ7cbXi Wb0X 5WWdhUVY I gY cZ I BGK '=7 H'F Ygci fWg'Dc']Wh
- VY Uk UfY cZh Y gHUbXUfXg cZVY Uj]ci f YI dYWYX cZYj YfmcbY]b h Y I BGK Wca a i b]m
- `cWUHY'gYfj]WYg'UbX']bZcfa UHjcb'UVci hI BGK 'UbX'I BGK '@VfUfm

Gca YicZh\YgYiUfYUgik]``VYiZJa]`]Ufihcimci žich\Yfgik]``VYibYk"'; U]b]b[`Uigc`]Xii bXYfgHJbX]b[`cZU``H\Y fY`UhYXiUgdYWfgicZ9@=G9ik]``\Y`dimci ia U_Yih\Yia cghicZmci fighi X]YgiUhil BGK "' <u>\hhd.#gi VYWf[i]XYg"`]VfUfm"i bgk "YXi "Ui #Y`]gY#JVci hY`]gY</u>

5WUXYa]W=bZcfaUh]cb

: cf'YggYbhJU``ghi XYbh']bZcfa UhJcb`fY`UhJb['hc.

- fYei Yghg Zcf Yl hYbg]cb/
- `UhY 'gi Va]gg]cbg '[i]XY `]bYg/
- fYj]Yk 'cZa Uf_g/
- | BGK '<YU`h\`UbX`GUZYhmidc`]W}Yg/
- YI Ua]bUh]cb'dfcW/Xi fYg/
- gdYWJU`Wcbg]XYfUh]cb`]b`h\Y`Yj YbhcZ]``bYgg`cf`a]gUXj Ybh fY/
- gh XYbhYei]m/UbX X]gUV]`]m/
- UbX'ch\Yf'YggYbh]U``UWUXYa]W]bZcfa Uh]cbž'gYY

<u>htdg.#k k k "Ufhg"i bgk "YXi "Ui #W ffYbHgH XYbhg#UWUXYa]W]bZcfa Uh]cb#dfchcWc`g![i]XY`]bYg#</u>

⊨a U[Y[·]7fYX]h

f?f]g\bU`G\fYgh\Už&\$% Ł

7F=7CG

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