

SOCW4003

5Xj UbWYX'GcWJU''K cf_'DfUWJWY'A Yh\cXg

HYfa 'C bY''##'&\$%

7ci fgY[·]Cj Yfj]Yk

GHJZZ:7cbHJWh:8YHJ]`g`

'7cbj Ybcfg'

B Ua Y	9a U]`	5j U]`UV]`] m	@cWUh]cb	D\cbY
>c 'GdUb[Ufc	9 -	A cbXUm&"' \$!(da UbX:VmUddc]bha Ybh	; ' %A cfj Yb 6fck b 6i]X]b[-',)'%-*(

'Hi hcfg'

B Ua Y	9a U]`	5j U]`UV]`]lm	@cWUh]cb	D\cbY
@bXU~6Ufhc`ca Y]	`]bXU"VUfhc`ca Y]4 i bgk "YXi "Ui	GcWJU``8YjY`cdaYbh !`6mUddc]bhaYbh	; &' [·] A cfj Yb 6fck b	-',)'%)-
>UbY'A ck``	^ack``4 i bgk "YXi "Ui	7 ci bgY``]b[A Yh\cXg'UbX F Yg]`]YbWY'! '6m Uddc]bha Ybh	; (\$'A cfj Yb 6fck b	-',)*\$*)\$
7 Yf]bU'K Y]gn	W		ç	bo

7ci fgY 8YHJ] g

7 fYX]hDc]bhg *

Gi a a UfmcZh\Y 7ci fgY

Gi VYWh5fYU. EaU[S^I ad]

Mci 'k]```ghi Xm'U`gdYVJZJWa Yh\cX`cZgcWJU``k cf_`dfUWJW'`]b!XYdh\"`5g`dUfhcZUXj UbWX`ghi Xm']b`h\Y`ZJY`X`cZGcWJU``K cf_žh\]g`Wci fgY`dfcj]XYg`mci 'k]h\Y`cddcfhi b]hmhc`XYYdYb`mci f`i bXYfgHUbX]b[`UbX`WUdUVJmhcdfUWJ\W']b`U`[]j Yb`UgdYWhcZUXj UbWXX`gcWJU``k cf_`a Yh\cXg"`Hi]hJcb`UbX`UggYgga Ybh']bWi XYg`k cf_]b[]bhYfUWJj Y`mk]h\YI Ua d`Yg`cZdfUWJWY"Ghi XYbhdfYZYfYbWYg`UfY`HU_Yb`]bhc`UWVci bh']b`YgHUV`]g\]b[`h\Y fUb[Y`cZUXj UbWX`a Yh\cXg`h\Uh'UfY`Wcbg]XYfYX`YUWX`mYUf"

7 ci fgY @YUfb]b[Ci hWca Yg

%" 7 cbW/dh U`]gY`U`gY`YWYX`gcWJU``k cf_`dfUWJWY`a Yh\cX"

&" 9I d`U]b fY`Yj UbhdfUWNW h\Ycf]Yg]b XYdh\"

- ' " 5fh]W `UhY 'h\Y 'fY`Uh]cbg\]d 'VYhk YYb 'g_]``g 'UbX '_bck `YX[Y 'fY`Yj Ubhihc 'U 'gY`YWhYX 'gcW]U``k cf_ dfUWr]WY 'a Yh\cX"
- ("GY`YWhUbX`Udd`mU`gcWJU``kcf_aYh\cX`hc`U`ghUhYX`dfUWJWY`]ggiY`cf`dfcV`Ya"

HYUWX]b[GlfUhY[]Yg

H\]g`Wci fgY`cZYfg`ghi XYbhg`]bghfi Whcb`]b`h\Y`h\YcfmUbX`dfUWh]WY`cZU`gY`YWhYX`gcW]U``k cf_`dfUWh]WY a Yh\cX"``H\Y`k YY_`mZcfa Uh]g`U`' !\ci f`WUgg`h\UhfYei]fYg`h\Y`UWh]j Y`dUfh]W]dUh]cb`cZU```ghi XYbhg`UbX Wca V]bYg`U`[i]XYX`fYUX]b[`dfc[fUa z`h\YcfmgYa]bUfg`UbX`dfUWh]WY`k cf_g\cdg"

5ggYgga Ybh

 $\label{eq:first-condition} FYZ\!Yf'hc'A\ ccX`Y'Z\!cf'gdYW]\!Z\!]WXYhU]`g'Z\!cf'Ugg][\ ba\ Ybhg'Z\!cf'YUWX'Y`YWM]\ Y''''$

5ggYgga Ybh'HUg_g'

5ggYgga Ybh'hJg_	K Y][\h	8i Y'8UHY	Gh XYbh@YUfb]b[Ci hWca Ygʻ5ggYggYX
7 f]r]WU`fYUX]b['	%\$I	\$, #\$' #&\$% `\$\$\$`DA	%ž&
G\cfnUbU`mtj\WU`kf]tjb[')।	&-#\$'#&\$%-`\$\$\$`DA	%ž&Ž
Gi VgHJbHj Y Ugg][ba Ybh))।	&-#\$(#&\$% `\$\$\$`DA	%ž&Ž Ž(

5ggYgga Ybh8YhJ]`g

5ggYgga Ybh% 7f]h]WU`fYUX]b[

GHJfh:XUHY.: &&#\$&#&\$%-:\$--\$\$ DA

@Yb[h\.

%

Hi fb]h]b`gYh]b[.`H\]g`Ugg][ba Ybh]g`gi Va]hYX`h\fci [\`Hi fb]h]b`UbX`ghi XYbhg`WJb`gYY`Hi fb]h]bfYdcfhg"	ʻg]a]`Uf]lm

5 hyb XUb WY F Yei]fYa Ybhg

H\Y`GW\cc``cZGcW]U``GW]YbWYg`Yl dYWfg`h\Uhighi XYbhg`k]```UhhYbX`UbX`dUff]W]dUhY`UWf]j Y`m]b`%\$\$ı `cZ `YUfb]b[`UbX`hYUW\]b[`UWf]j]h]Yg`f\YbWYZcff\\`'WUggYg'ž'hc`]bWi XY``YWfi fYgž'fi hcf]U`gž'gYa]bUfgž``UVgž'cb`]bY UWf]j]h]Yg`UbX`gc`cbŁ"

 $A \ UbXUhcfmUhhYbXUbWY`cZWUggYg`Zcf`h\]g`Wci \ fgY`]g`dUfhcZh\Y`UWWYX]hUh]cb`fYei \]fYa \ Ybhg`Zcf`h\Y`6GK fk cbgŁ'dfc[\ fUa "$

⊋mci 'UhhYbX''Ygg'h\Ub', \$i 'cZWUggYgž'mci 'a Um'VY'fYZ gYX'Z]bU`'UggYgga Ybh''H\]g'a YUbg'h\Uh]Zmci 'Xc bchUhhYbX'Uh'YUgh', \$i 'cZdcgg]V'Y'WUggYg'mci f'Z]bU`'Ugg][ba Ybh'cf'Yl Ua 'a UmfYWY]j Y'U'a Uf_'cZnYfc" Mci 'UfY'fYgdcbg]V'Y'Zcf'_YYd]b['hfUW_'cZmci f'UhhYbXUbWY'UbX'WcbhUWf]b['mci f'Wci fgY'Wcbj Ybcf'fUXX bUa Y'L']a a YX]UhY'm]Zmci 'UfY'WcbWYfbYX'UVci hmci f'UhhYbXUbWY'fYWcfX'UbX']hg']a dUWhcb'mci f'UV]`]hmhc Wca d'YhY'mci f'Wci fgY'gi WWYggZ ``m'

cf'h\Y'di fdcgY'cZUhhYbXUbW'a cb]hcf]b[ž'h\Y'Z]bU``UggYgga Ybh'Zcf'h\]g'Wci fgY']g'h\Y'Gi VghUbh]j Y 5gg][ba Ybhk cfh\'))ı cZmci f'cj YfU```[fUXY'Zcf'h\]g'Wci fgY"'H\]g']g'h\Y'UggYgga Ybh']hYa 'h\Uhk]``'VY [fUXYX'UhnYfc']Zmci 'Xc'bcha YYhh\Y'UhhYbXUbW''fYei]fYa Ybh'

7 ci fgY GWX YXi `Y

J]Yk 'WUqq'ha YHJV'Y

H]a YHJV`Y`

8 UHY	HmdY	7 c bhYbh
K YY_'%'% ': YVfi Ufm!'&(: YVfi Ufm	GYa]bUf	7CIBG9@4; A 9H <c8g5b8 f9g@9b799@97h="1957AFEECf]YbHUh]cbhc" fyg`]ybwyubxghfyb[h\gžyaduh\mubxyb[u[yaybh<="" td=""></c8g5b8>
	GYa]bUf	GC7=5@`89J9@CDA9BH`9@97H=J9`fGC7 89JŁ``=blfcXiWf]cb.`h\Y`GcW]U``8YjY`cdaYbh UddfcUW\`
K YY_"&."&) ": YVfi Ufmi!"'	GYa]bUf	Gc`i h]cb!ZcW gYX'h\YfUdm'%
A UfWX	GYa]bUf	GC 7 '89J '! 'Gi ghJ]bUV`Y '8Yj Y`cda Ybh; cU`gž'dc`]Wh VUW_[fci bX`UbX'h\Y`WcbWYdhcZ'k Y`ZJfY'fY[]a Yg'ž]a d`]WJh]cbg'Zcf'dfUWf]WY
K_YY_" ."("A_UfWX"!"%\$	GYa]bUf	7 A F '!'Gc'i hjcb!ZcW gYX'h\YfUdm'&
A UfWX	GYa]bUf	GC 7 '89J '! 'H\Y'[cU`g'cZgcWJU`'XYj Y`cda Ybh \YU`h\/YXi WUrJcb/'ZJa]`m'/`]j Y`]\ccXg'UbX'dcj Yffm U``Yj]UrJcb'
K_YY_^(_^%%^A_UfV\\^'!^%+	GYa]bUf	7 A F '! 'B UffUhjj Y 'h\YfUdm'%
A UfW	GYa]bUf	GC7'89J'!'GcWjU`'fkY`ZJfYŁ'gYfj]WYg'UbX'gcWjU`dc`]WfiUg'gcWjU`'XYjY`cdaYbh'f\Y'fc`Y'cZgcWjU`kcf_
K_YY_") ."% "A_UfVX"!"&(FYUX]b[7 A F '! '''' B UffUhjj Y 'H\YfUdm'&
A UfVX	GYa]bUf	GC 7 ''8 9J '! '7 ca a i b]lmXYj Y`cda YbhUg gcWJU`'XYj Y`cda YbhdfUWJWY

K YY_'*.'&) 'A UfWX'!'' %	GYa]bUf	7 A F '!': Ua]`mih\YfUdmi%
A UfWX	GYa]bUf	GC 7 '89J '!'Dfc[fUa 'd`Ubb]b['UbX'a UbU[Ya Ybh
K_YY_"+."%"5df]`"!"+"5df]`	GYa]bUf	7 A F T: Ua]`mih\YfUdm&
	GYa]bUf	GC7 ⁻ 89J ⁻ !-DfUWjWY-Yl Ua d`Y-%-A jWfc!ZjbUbWYž
		; YbXYfžFYZ [YYgʻcfʻh\Yʻ9bj]fcba Ybh
K YY_', .', '5df]`'!'%('5df]`	GYa]bUf	7 A Fʻ!ʻ≢bhYbg]jYʻfc`Y!d`UmdfUWJWY`k cf_g\cd
	GYa]bUf	GC 7 189J 11 DfUWJWY1YI Ua diyi & iA]Wfc! ZjbUbWYž
		; YbXYfžFYZ [YYgʻcfʻh\Yʻ9bj]fcba Ybh
K YY_''%) '5df]`'!'&%	GYa]bUf	7 A F '! 'Gd]f]hi U`]hniUbX'fYg]`]YbW'' 'f1 F =85M
5df]`	0.77	G9A
	GYa]bUf	GC7'89J'!'DfUWfWY'YIUad'Y''.'A]Wfc!ZbUbWYž
I/	C//- 11-11E	; YbXYfžFYZ [YYgʻcfʻth\Yʻ9bj]fcba Ybh
K YY_`%\$.`&&`5df]``!`&, 5df]`	GYa]bUf	7 A F '! 'H\i fgXUmigYa]bUfg'! 'BC '7 @5GG9G
		: f]XUmgYa]bUf'!'Gd]f]h U`]hmUbX'fYg]`]YbW'''
	GYa]bUf	GC 7 89J ! <ca dcgg]v]]h]yg<="" fy="" h="" td="" ubx="" uk="" um-="" y="" z=""></ca>
		Zcf`gcWJU``k cf_`dfUWJWY`]b`gcWJU``UbX`Wca a i b]lm XYj Y`cda Ybh']b`5i glfU`]U`UbX`]bHYfbUhJcbU``m
K_YY_"%%"&- "5df]`"!"%		

FYgci fW/g

DfYgWf]VYX F Ygci fWYg

FYUX]b[g'UbX'fYgcifW/g'Zcf'h\]g'Y`YWhj Y'UfY'gdYWjZYX'cb'h\Y'gYWhjcb'cZh\Y'AccX`Y'dU[Y'Zcf'h\]g'Y`YWhj Y

FYWca a YbXYX FYgci fWYg

 $FYUX]b[g'UbX'fYgcifWYg'Zcf'h\lambda]g'Y'YWf]jY'UfY'gdYWfZYX'cb'h\lambdaY'gYWf]cb'cZh\lambdaY'AccX'Y'dU[Y'Zcf'h\lambda]g'Y'YWf]jY'YWfZYX'cb'h\lambdaY'gYWfZYX'cb'hXY'gYWfZYX'Cb'hXY'AccX'Y'dU[Y'Zcf'h\lambda]g'Y'YWfZYX'cb'hXY'gYWfZYX'Cb'hXY'gYWfZYX'Cb'hXY'AccX'Y'dU[Y'Zcf'h\lambda]g'Y'YWfZYX'Cb'hXY'gYWfZYX'Cb'hXY'AccX'Y'dU[Y'Zcf'h\lambda]g'Y'YWfZYX'Cb'hXY'gYWfZYX'Cb'hXY'GYWfZYX'Cb'hXY'ACCX'Y'dU[Y'Zcf'hX]g'Y'YWfZYX'Cb'hXY'GYWfZYX'Cb'hXY'ACCX'Y'DU[Y'Zcf'hX]g'Y'YWfZYX'Cb'hXY'GYWfZYX'Cb'hXY'ACCX'Y'DU[Y'Zcf'hX]g'Y'YWfZYX'Cb'hXY'ACCX'Y'DU[Y'Zcf'hX]g'Y'YWfZYX'Cb'hXY'GYWfZYX'Cb'hXY'ACCX'Y'DU[Y'Zcf'hX]g'Y'YWfZYX'Cb'hXY'GYWfZYX'Cb'hXY'ACCX'Y'DU[Y'Zcf'hX]g'Y'YWfZYX'Cb'hXY'GYWfZYX'Cb'hXY'ACCX'Y'DU[Y'Zcf'hX]g'Y'YWfZYX'Cb'hXY'Cb'hXY'ACCX'Y'DU[Y'Zcf'hX]g'Y'YWfZYX'Cb'hXY'Cb'hX'Cb'hXY'Cb'hX'Cb'hX'Cb'hXY'Cb'hX'Cb'hX'Cb'hX'Cb'hX'Cb'hX'Cb'hX'Cb'hX'Cb'hX'Cb'hX'Cb'hX'$

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

H\]g`Wci fgY`]g`Yj U`i UhYX`i g]b[`ghi XYbh`YUfb]b[`fYj]Yk gž`WUgg`ZYYXVUW_`UbX`h\Y`A mYI dYf]YbW' gi fj Ym fYgi `hg"``Ghi XYbh`ZYYXVUW_`]g`j U`i YX`Ug`dUfhcZh\Y`cb[c]b[`Wci fgY`fYj]Yk `UbX`XYj Y`cda Ybh'`H\Y`cZZYfYX Y`YWhjj Yg`]b`h\]g`Wci fgY`a Umj UfmZca `mYUf`hc`mYUf`UbX`Y`YWhj Y`gdYW]Z]WZYYXVUW_`\Ug`VYYb`i gYX`hc a U_Y`W\Ub[Yg`k \]W\`\Uj Y`]bWi XYXžVUgYX`cb`dfYj]ci g`Yj U`i Uh]cbg`'! `W\Ub[Yg`\Uj Y`VYYb`a UXY`hc UggYgga YbhHUg_g`UbX`Z]bY!hi b]b[`cZWUgg`YI YfW]gYg`"``H\Ub_`mci `]b`UXj UbW' Zcf`mci f`dUfh]W]dUh]cb`]b`h\]g dfcW/gg"

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

5 WUXYa]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"'=hWJb'hU_Y`a Ubm Zcfa gžZfca `XY`]VYfUhY`W\YUh]b['hc`UWW]XYbhU`mWcdm]b['Zfca `U`gci fWY'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 Yfmg]a]`Uf'k cfXg'hc'h\Y'cf][]bU`hYl h'cf']XYU'k]h\ci h'UW_bck `YX[]b['h\Y gci fW'cf'i g]b['ei chUh]cb'a Uf_g"'H\]g'U`gc'Udd`]Yg'hc']a U[Ygž'Ufh'UbX'XYg][b'dfcYWhgž'Ug'k Y``'Ug dfYgYbhUh]cbg'k \YfY'gca YcbY'dfYgYbhg'Ubch\Yf'g']XYUg'cf'k cfXg'k]h\ci h'WfYX]h'

⇒ Uddfcdf]UhY 'dUfUd\fUg]b[...7\Ub[]b['U'ZYk 'k cfXg'UbX'd\fUgYg'k \]'Y 'a cghmfYhJ]b]b['h\Y'cf][]bU` ghfi Wh fY 'UbX#cf'dfc[fYgg]cb'cZ]XYUg'cZh\Y'cf][]bU'žUbX']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_jb['k]h\ch\Yfg'Vi hdUgg]b['cZZh\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'ghi XYbhVYZcfY'h\Y'Xi Y'XUhYžcf'Zcf'h\Y'di fdcgY'cZh\Ya d`U[]Uf]g]b['UhiUbmh]a Yž'dUm]b['Ubch\Yf'dYfgcb'hc'dYfZcfa 'Ub'UWUXYa]WhUg_ž'ghYU']b['cf'UWei]f]b[Ubch\Yf'dYfgcb'g'UWUXYa]Wk cf_'UbX'Wcdm]b[']hz'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[ˈgci fWYg'k\]WX`\Uj Y`bchVYYb`fYUXžk]h\ci hUW_bck`YX[]b[`h\Y`″gYWcbXUfm″gci fWY`Zfca 'k\]WX`_bck`YX[Y`cZh\Ya`\Ug'VYYb`cVhU]bYX"

8 i d`]\WUh]cb`ffgY`Zd`U[]\Uf]ga "Ł gi Va]\h]b[`mci f`ck b`k cf_ž]b`k \c`Y`cf`]b`dUfhžk \YfY`]h\Ug`dfYj]ci g`m VYYb`dfYdUfYX`cf`gi Va]\hYX`Zcf`Ubch\Yf`UggYgga Ybhcf\Wci fgY`UhI BGK `cf`Ubch\Yf`i b]j Yfg]\m'

7 cffYWnfYZYfYbWlb['dfUWnWyg.

- DUfUd\fug]b[ž'gi a a Uf]g]b[ž'YggUmk f]h]b["UbX"h]a Y a UbU[Ya Ybh
- 5ddfcdf]UhY'i gY'cZUbX'Uhf]Vi h]cb'Zcf'U'fUb[Y'cZa UhYf]U`g']b\$

‰ ∪,



5WUXYa]W = DZcfa Uh]cb

: cf`YggYbhJU``gh 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/
- I BGK '<YU`h\ 'UbX'GUZYhm'dc`]W[Yg/
- YI Ua]bUh]cb dfcWXi fYg/
- gdYWJU``Wcbg]XYfUhJcb`]b`h\Y`Yj YbhcZ]``bYgg'cf'a]gUXj Ybh fY/
- gh XYbhYei]hmUbX X]gUV]`]hm/
- UbX'ch\Yf'YggYbhJU`'UWUXYa]W]bZcfa UhJcbž'gYY