

MDIA5024

5Xj Yfh]g]b['GhfUhY[m

HYfa "Hk c" ## "&\$&\$

7ci fgY Cj Yfj]Yk

GHJZZ7cbHJWh8YHJ]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cWUh]cb	D\cbY
D51 @FM89F	ĕ	K YXbYgXUmg %(\$\$!%)\$\$'Vmdf]cf Ya U]`'Uddc]bha Ybh	K YVghYf" ‰G	

Hi hcfg

B Ua Y	9a U]`	5j U]`UV]`] m	@cWUhjcb	D\cbY
585A	U"ghUd`Yhcb4 i bgk "YXi "Ui	H65	K YVghYf" ‰G	
GH5D@9HCB				

GWkcc~7cbhJWh~abZcfa Uhlcb

GWXcc``cZhXY`5fhg`UbX`AYX]U

Fcca " %&ž@YjY`" žFcVYfhK YVghYf`6i]`X]b[f) %(Ł

D\cbY. 'f\$&Ł'-',) '(,) *

9a U]`. 'gUa 4 i bgk "YXi "Ui

K YVg]hY. k k k "Ufhg"i bgk "YXi "Ui #gUa

 $\label{thm:constraint} $$HY'GWKcc``cZhY'5fhg`UbX`AYX]U'kci`X``]_Y'hc'FYgdYWZI``m'5W_bck`YX[Y'h\Y'HfUX]h]cbU``7ighcX]Ubgžh\Y'6YXY[U``fPYbg]b[hcb'WJadigŁž'; UX][U``fP]hmUbX'5fhV'8Yg][b'7UadigYgŁ'UbX'h\Y'B[ibbUkU`dYcd'Y'f5ighfU`]Ub'8YZYbWY': cfWY'5WJXYam']b'7UbVYffUŁ'cZh\Y'`UbXg'k\YfY'YUWK'WJadig'cZlBGK']g`cWJhYX''$

7ci fgY 8YHJ] g

7 fYX]hDc]bhg *

Gi a a UfmcZh\Y 7ci fgY

 $H\g'' CZYfg'Ub']bfcXi Wfjcb'fc'h Y'glfUhY[]Yg'Yb[U[YX'VmUXjYfh]gYfgž'UbX'fc'h Y'fc'Y'h Uh UXjYfh]g]b['d'Umg']b'Wcbgi a Yf'W'h fY''''H\YfY']g'U'ZcW g'cb'h Y'bi UbW'X'h YcfmUbX'glfUhY[]Wh]b_]b[VY\]bX'h Y'a YggU[Yg'k Y'Wcbgi a Y'XU]'m'''$

Mci 'k]```Yl d`cfY`gcWJU`žW`hi fU`ž``]hYfUfnž'UbX`j]gi U``Wca a i b]\WUhjcb`h\Ycf]Yg`h\Uha UmVY`Yb[U[YX`hc i bXYfghUbX`UbX`Wf]hjei Y`]bX]j]Xi U``UXj YfhjgYa Ybhgž'UbX`mci 'k]```U`gc``YUfb`\ck 'hc`UbU`mgY`h\Y`gca Yhja Yg j Yfmgi VhY`ghfUhY[]Yg`VY\]bX`Z ``!g\WJY`UXj Yfhjg]b[\WJa dU][bg"`

7 ci fgY @YUfb]b[Ci hWca Yg

- %" 5dd`mih\Ycfmhc`Wf]hjei Y`UXj Yfhjg]b['glfUhY[mi]b`U`fUb[Y`cZWca a YfWjU`ž'Wcbgi a Yf`UbX`gcWjU` WcbhYl hq
- &" I bXYfghUbX`h\Y`gi VhY`ghfUhY[]WWcbbYWhcbg`VYhk YYb`Zcfa `UbX`WcbhYbh]b`h\Y`WcbhYl hg`cZVch\]bX]j]Xi U``UXj Yfh]gYa Ybhg`UbX`UXj Yfh]g]b[`WUa dU][bg
- ' " 5ddfYWJUHY 'UbX'WfJhjei Y'h\Y'gHfUHY[]WYb[U[Ya YbhcZgYa]chJWWcXYg']b'U'fUb[Y'cZdf]bh UXj YfhJgYa Ybhgž'HY'YJ]gi U`'7 ca a YfWJU'gž'UbX'Z ```WJa dU][bg
- ("I bXYfgHJbXžUddfYV)JUHY`UbX`Yj U`i UHY`Ub`UffUmcZgHi Whi fU``ZYUHi fYg`Yb[U[YX`VmUXj Yfh]g]b[WfYUh]j Yg

HYUWX]b[GhfUhY[]Yg

H\]g`Wci fgY`]g`XYg][bYX`rc`]brfcXi WY`ghi XYbhg`rc`U`fUb[Y`cZghfUhY[]WUddfcUWXYg`rc`UXj Yfh]g]b[`]b`fUd]X`m WXUb[]b[`a YX]U`WcbhYl hg"@YWhi fYg`dfcj]XY`]bhY``YWhi U`a cXY``]b[`UbX`fY\YUfgU``cZwcbWYdhgž`UbX`UfY`cZ dUff]W``Uf`fY`Yj UbWY`rc`h\Y``Uf[Y`Wc\cfncZ]bhYfbUh]cbU``ghi XYbhg"`Hi hcf]U`g`k]``dfcj]XY`h\Y`VUg]g`Zcf]bhYfUWhj Yž'dUff]W]dUhcfmž'UbX`fYZYWhj Y`hYUWX]b[`UddfcUWXYg`]bWi X]b[`fYU`!h]a Y`[fci d`k cf_ž dfYgYbhUh]cbgž'UbX`WUgY!ghi XmXYVUhYg"7cbWYdhi U``ZfUa Yk cf_q`UbX`Udd`]YX`a Yh\cXg`k]```VY`df]cf]h]gYX"

5XX]h]cbU`XYhU]`g.

D`YUgY`gYY`AccX`Y"""

 $\label{thm:continuous} \begin{tabular}{ll} Hi & fb & gYH & gYY &$

5ggYgga Ybh'. 7Ua dU][b GhfUhY[m]

Ghufh Xuhy.

@Yb[h\. ') \$\$!(\$\$\$ k cfXg

8YHJ]`g.

; fci d'\f\]h\\U\`fYZY\\f\]cb'cbž'UbX`fY!Yb[]bYYf]b['cZž'U'\Vfc_Yb'\\Ua dU][b"

') \$\$!(\$\$\$"k cfXg"

 $\label{eq:continuity} Ghi~XYbhg`k~]```fYWY]j~Y`ZYYXVUW_'j~]U`Hi~fb]h]b"$

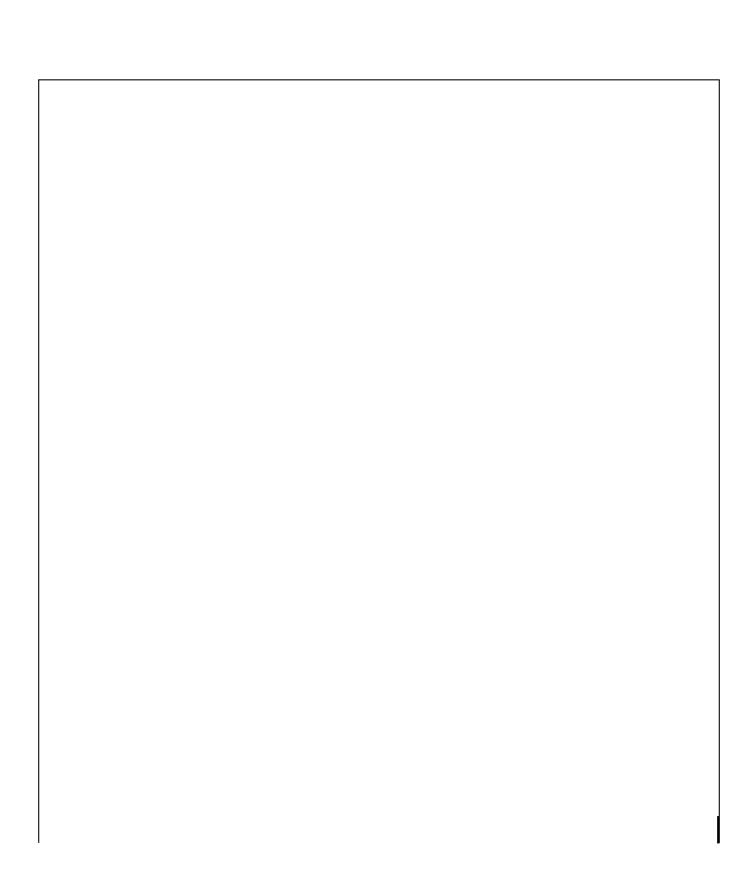
5XX]h]cbU`XYhU]`g.

D`YUgY`gYY`AccX`Y`Zcf`XYhU]`g"

H\]g^]g^U^[fcid^UggYgga Ybhgi Va]hhYX^h\fci[\^UgdYW]U^AccX`Y^5ggYgga Ybh`]b_"^

Gi Va]gg]cb bch/g. H\]gi]giUi[fci diUggYgga Ybhigi Va]hh/Xih\fci [\iUgdYW]UiA ccXiYi5ggYgga Ybhi]b_"

Hi fb]hjb gYhjb[. H\]g]g bchU Hi fb]hjb Ugg][ba Ybh



		Wcbgi `hg`dYf`A ccX`Y"`GUa Y`a cXY`Ug`A 8 €5`)\$&, "
K YY_'%\$.'' '5i [i gh'!'+	Gh X]c	Bc``YWhifY"'Bc'hihcf]U`g"'H\]g'kYY_`]g'fYgYfjYX'Zcf
5i [i gh		Zbu``Wabgi `hg"

FYgci fWYg

DfYgWf]VYX F Ygci fWYg

GYY 'A ccX`Y

FYWca a YbXYX FYgci fWYg

GYY'A ccX`Y

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

GYY 'A ccX`Y"

Gi Va]gg]cb cZ5ggYgga YbhHUg_g Hi fb]h]b Gi Va]gg]cb

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]XYbhJ``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.

 $7 \text{ cdm}b[...i g]b[...h\Y.gUa Y.cf.j Yfmig]a] \Uf'k cfXg'hc'h\Y.cf][]bU''hYl h'cf']XYU'k]h\ci h'U\V_bck `YX[]b[...h\Y.cf][]bU''hYl h'cf']XYU'k]h'cf']$

5 WUXYa]W = b Zcfa 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 dfcW/Xi fYg/
- gdYWJU``Wcbg]XYfUhjcb`]b'h\Y'Yj YbhcZ]``bYgg`cf'a]gUXj Ybh fY/
- qh XYbhYei]hmUbX X]gUV]`]hm/
- UbX'ch\Yf'YggYbhJU`UWUXYa]W]bZcfa UhJcbžgYY

\hdg.#k k k "Ufhg"i bgk "YXi "Ui #W ffYbhgh XYbhg#UWJXYa]W]bZcfa Uh]cb#dfchcWc`g![i]XY`]bYg#

.

=a U[Y 7 fYX]h

⇒a U[Y gcifWY.

\hdg.#k k k "[cc[\u00aay\u00aay\u00aay\u00aa\u00