

ARTS1780

7 cbW/dhg cZ9i fcdY

HYfa "H\fYY" ## "&\$&\$

7ci fgY⁻Cj Yfj]Yk

GHJZ7cbHJWh8YHJ]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`] m	@cWUh]cb	D∖cbY
FcVYfhi6i W	FcVYfh'6iW.4 ibgk "YXi"Ui	6mUddc]bha Ybh	A cfj Yb 6fck b &) %	-',)!,*('

GWXcc``7cbHJWhi±bZcfa Uh]cb

GWkcc`cZ<iaUb]hJYg'UbX'@Ub[iU[Yg

@c\\U||cb. G\\cc``C\\Z|\\\žA\cfj\Yb'6fck\b'6i]\X]b[\z'@\j\Y``&z'&),

CdYb]b['<ci fg. 'A cbXUm'! : f]XUmž - Ua '! ') da

D\cbY.'Ž*%'&'-',)'%*,%

: UI . 'Ž * %'&'-' ,) ', +\$)

9a U]`. '<u>\U`4 i bgk "YXi "Ui</u>

7ci fgY 8YHJ] g

7 fYX]h'Dc]bhg '* '

Gi a a UfmcZh\Y 7ci fgY

 $K_{0}^{3} = \frac{1}{2} \frac{1}{2}$

5ggYgga Ybh

5ggYgga YbhHUg_g

5ggYgga Ybh'hJg_	K Y][\h	8i Y'8UHY	Gh XYbh@YUfb]b[Ci hWca Ygʻ5ggYggYX
±b!WUgg 'hYgh'	')	%* #%\$#&\$&\$`%&.\$\$`DA	%ž&Ž ž(ž)
K f]ttYb fYgdcbgYg tc fYUX]b[g	&) ı	Bch5dd`]WUV`Y	&Z Ž)
HU_Y`\ca Y`YggUm	(\$1	&(#%%\$\$\$`\$\$\$`DA	%ž&Ž Ž(ž)

5ggYgga Ybh'8YHJ]`g

5ggYgga Ybh% ≠9!WUgg hYgh

GhUfhXUhY. Bch5dd`]WUV`Y

@Yb[h\.** \$ a bg

8 YW] g.

H\Y`]b!WUgg'h'ghik]``VY`*\$`a]b`UbX`k]``[]jY`ghiXYbhg`Ub`cddcfhib]hmhc`XYacbghfUhY`h\Y]f`UV]`]hmhcfYZYWbZ'UbU`ngY`UbX`g\ck`h\Y]f`ibXYfghUbX]b[`cZh\Y`h\YaYgz']ggiYg`UbX`XYVUhYg`WcjYfYX`]b`h\Y`WcifgY"

Ghi XYbhg fYVW]j Y 'U 'a Uf_" 'F YgdcbgYg 'X]gW ggYX ']b 'WUgg"

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

H\Y'cb`]bY'hYgha i ghVY'hU_Yb'Xi f]b['h\Y'h hcf]U``\ci fg'cb': f]XUm''CbWY'mci 'ghUfhh\Y'hYghmci '\Uj Y'g]l hm a]bi hYg'hc'Wca d`YhY']h''

5ggYgga Ybh& K f]hYb fYgdcbgYg hc fYUX]b[g

Ghufh Xuhy. 7 cbhbi ci g`m Zfca k _ %

@Yb[h\.'&) \$'k cfXg') | 'cj Yf'h\Y'Wti fgY'cZh\Y'hYfa

8YW]`q.

K YY_`mei Ygh]cbg`cb`h\Y`fYUX]b[g`k]```\Y`d`ghi XYbhg`XcW a Ybhh\Y]f`fYUX]b[`UbX`h\]b_]b[`cb`h\Y`a UhYf]U`" Ghi XYbhg`k]```bYYX`hc`gi Va]hZji Y`gYhg`cZfYgdcbgYgžYUW\`cZa Ul]a i a `&) \$`k cfXgžcj Yf`h\Y`h\fa Wbg]gh]b[`cZU`fYgdcbgY`hc`cbY`cZh\Y`fYUX]b[g`cZU`[]j Yb`k YY_`UbX`U`X]gW gg]cb`ei Ygh]cb`cZh\Y]f`ck b cb`h\Y`ch\Yf`k YY_`mfYUX]b["'H\fYY`ci hcZh\Y`Zji Y`gi Va]gg]cbg`]b`hchU``k]```VY`a Uf_YX"

Gh XYbhg fYWr]j Y U a Uf_" 5 gYhcZgUa d`Y fYgdcbgYg UbX X]gW gg]cb ei Ygh]cbg k]``VY X]gW ggYX]b WUgg"

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

A DCFH5BH B: CFA 5H€B !! D@95G9 F958 75F9: I @@M

F YgdcbgYgʻUfYʻXi YʻH\i fgXUmYj Yb]b[ˈ&%\$\$"'5gʻ]h]gʻbchdcgg]V`Yʻhcʻa Uf_`]bX]j]Xi U``fYgdcbgYgʻZfca k YY__hcʻk YY_ž'h\Y`fYgdcbgYgʻk]```bYYX`hc`VY`fY!gi Va]hhYX`Zcfʻa Uf_]b[ˈ]b`hk cʻVi bX`Yg"

H\Y`Z|fghilk c`fYgdcbgYg`WUb`VY`fY!gi Va`]lhYX`j`]U`Hi fb]h]b`Ug`cZk YY_`(`UbX`g\ci`X`VY`fY!gi Va`]lhYX`bc`UhYf`h\Ub`k YY_`*"'H\Y`Z|bU``h\fYY`fYgdcbgYg`UfY`Xi Y`]b`k YY_`%\$`Uhih\Y``UhYgh'

D@95G9BCH9H<5HCB@MF9GDCBG9GDF9J€IG@MGI6A + HH98+BH<9K99?H<9 F958-B; GK9F98-€7IGG98K-@695779DH98: CFF9!GI6A-€G€B5B8A5F?-B; "

H\Y'k YY_`mgi Va]gg]cb 'Wcbg]ghg`cZ'U`fYgdcbgY`hc`cbY`cZh\Y`dcghYX`ei Ygh]cbg`5B8`U`X]gWi gg]cb ei Ygh]cb`cZ'mci f`ck b`UVci hi\\Y`ch\Yf`fYUX]b[*`

 $: cf'k YY_g']b'k \setminus]WX'h YfY']g'cb`mcbY'fYUX]b[\check{z}mci f'fYgdcbgY'hc'h Y'fYUX]b['g \ci `X'U`gc'WcbhJ]b'U X]gW gg]cb'ei Ygh]cb'cZ'mci f'ck b'cb'h Uh'k YY_fg'fYUX]b['''$

5ggYgga Ybh' . HU_Y \ca Y YggUm

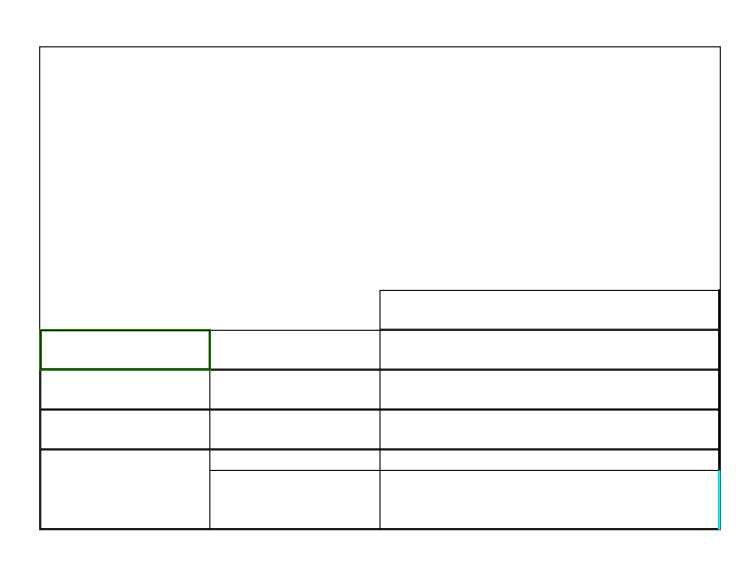
GhUfh'XUhY. '&' #///#&\$&\$ '\$-.\$\$ '5A

@Yb[h\.'%)\$\$ k cfXg

8YW]`q.

Ghi XYbhgʻufYʻ[]j Ybʻlk cʻXUmgʻhcʻgi Va]hʻubʻYggUmcZWʻ%) \$\$ʻk cfXgʻʻE i Ygh]cbgʻufYʻXYg][bYX'hcʻ[]j Yghi XYbhgʻh\Yʻcddcfhi b]hmhcʻXYa cbghfuhYʻh\Y]fʻi bXYfghUbX]b[ˈcZh\Yʻh\Ya Ygž]ggi YgʻUbXʻXYVUhYgʻWcj YfYX]bʻh\Y`Wci fgY''

: YYXVUW_fi Vf[WUbX'Vf]YZ]bX]j]Xi U`'Wa a Ybhq']b'A ccX`Y"



FYgci fWfg

DfYgWf]VYX F Ygci fWYg

H\Y`Z|bU``gY`YW]cb`cZfYUX]b[g`]g`Uj U]`UV`Y`Y`YWfcb]WU``mih\fci [\`h\Y`i b]j Yfg]lmi=|VfUfmiWUHU`c[i Y" C WWUg]cbU``mžfYUX]b[g`a UmiXYdUfhiZfca 'h\Y`cbW'`]ghYX`cb'h\Y``YWi fY#i hcf]U``gW\YXi `Y"

FYWca a YbXYX FYgci fWfg

 $\verb| >c\b|'<|fghz'H\Y'G\cfhYgh'<|ghcfmcZ'9i|fcdYz'@cbXcb.'C`X'GhfYYh'Di|V`]g\|b[|z'&&\'''|$

 $5j\ U]`UV`Y`Y`YWfcb]WU``mth.fci\ [\ \ 'th.Y``]VfUfm`WUtU`c[\ i\ Y`UbX`Zcf`di\ fWX.UgY`Uhth.Y`WUa\ di\ g`Vcc_ghcfY''$

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

: cf k VUW_

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

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

Image: Ybwei bhyfu'dfcv'ya k \yb'uhhya dhjb['hc'gi va]hmci f'Ugg][ba Ybhh\fci [\ 'Hi fb]h]bž'd'YUgY

Hy'Yd\cby'9| hy'fbu''Gi ddcfhcb'-',) '' ' ' %cf'Ya U]''h\Ya 'cb'Y! hy'fbu'hy'hgi ddcfh4 i bgk "YXi "Ui "''Gi ddcfh
\ci fg'UfY', .\$\$Ua '-'%\$.\$\$da 'cb'k YY_XUmg'UbX'-.\$\$Ua '-').\$\$da 'cb'k YY_YbXg'fl *) 'XUmg'U'mYUft"'=Z'mci
UfY'i bUV'Y'hc'gi va]hmci f'Ugg][ba YbhXi Y'hc'U'ZJi 'hk]h\ 'Hi fb]h]b'mci 'a Um'Udd'mZcf'Ub'Y! hy'bg]cbž'Vi hmci
a i ghfYhJ]b'mci f'h]W_Yhbi a VYf'Zfca '9! hy'fbU''Gi ddcfhfU'cb['k]h\ 'Ubmch\Yf'fy'Yj UbhXcW a Ybhgt'hc
]bWi XY'Ug'Yj]XYbW' 'hc'gi ddcfhmci f'Y! hy'bg]cb'Udd']WUh]cb"'=Zmci 'Ya U]''9! hy'fbU''Gi ddcfhmci 'k]'`
Ui hca Uh]WJ'`mfYW']j Y'U'h]W_Yhbi a VYfZ'Vi h]Zmci 'hY'Yd\cbY'mci 'k]``bYYX'hc'gdYW]Z]WJ'`mUg_'Zcf'cbY''
Hi fb]h]b'U'gc'dfcj]XYg'i dXUhy'g'cb'h\Y]f'gmghYa 'ghUh' g'cb'Hk]hyf''

; YbYfU`mž'UggYgga YbhiHug_g'a i ghVY'gi Va]hhYX'Y`YVWfcb]\WJ``mij]U'Y]h\Yf'Hi fb]h]b'cf'U'A ccX`Y Ugg][ba Ybh''=b']bgHJb\W'g'k \YfY'h\]g']g'bchdcgg]V`Yž']hk]```VY'gHJhYX'cb'mci f'\\circ i fgY'g'A ccX`Y'g]hY'k]h\U`hYfbUh]j Y'gi Va]gg]cb'XYHJ]`g"

cfi]bZcfa Uhjcbicbi\ckihcigi Va]hUgg][ba Ybhgicbi]bYij]UiA ccXiY.i\hdg.#gh XYbhi bgk "YXi "Ui #\ck! gi Va]hUgg][ba Ybha ccXiY

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

D`U[]Uf]ga i]gii g]b[ih\Yik cfXgicfi]XYUgicZch\YfgiUbXidfYgYbh]b[ih\Ya iUgimci fick b"i=hWJbihU_Yia Ubm Zcfa gžZfca iXYi]VYfUhYiWXYUh]b[ihciUWW]XYbhU`mWcdm]b[iZfca iUigci fWYik]h\ci hiUW_bck iYX[Ya Ybh'

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

- i bXYfgfUbX mci f'f][\hg'UbX'fYgdcbg]V]`]hJYg'Ug'U'gh XYbhUhl BGK
- VY`Uk UfY`cZd`U[]Uf]ga ž`Wcdmf][\hz'l BGK `Gh XYbh7cXY`cZ7cbXi WhUbX`5VWWdhUV`Y`l gY`cZ I BGK `=\forall H`F Ygci f\W\g`Dc`]\m\m
- VY 'Uk UfY 'cZh\Y 'ghUbXUfXg 'cZVY\Uj]ci f'Yl dYWYX 'cZYj YfmcbY ']b 'h\Y 'l BGK 'Wca a i b]hm
- `cWUHY'qYfj |WYq'UbX']bZcfa UHcb'UVci hi BGK 'UbX'l BGK '@|VfUfm

Gca Y'cZh\YgY'UfYUg'k]``VY'ZJa]`]Uf'hc'mci ž'ch\Yfg'k]``VY'bYk"'; U]b]b['U'gc`]X'i bXYfgHJbX]b['cZU``h\YfY`UhYX'UgdYWng'cZ9@+69'k]``\Y`d'mci 'a U_Y'h\Y'a cghicZmci f'ghi X]Yg'UhI BGK "'\\hd.##qi VYWfi |XYg"`]VfUfm'i bqk "YXi "Ui #\`]qY#JVci hY`]qY