

ARTS1811

7 cbhYa dcfUfm=ggi Ygʻ]bʻ; cj Yfba YbhUbX; `cVU``Dc`]h]Wg

HYfa 'H\fYY''##'&\$%-

7ci fgY[·]Cj Yfj]Yk

GHJZZ:7cbHJWh:8YHJ]`g`

'7cbj Ybcfg'

B Ua Y	9a U]`	5j U]`UV]`]m	@cWJhjcb	D\cbY
A cb]_U'6Uff\k U'! 8UffU	a "VUffn\k U`!XUhhU4 i bgk "YXi "Ui		F a '%(- A cfj Yb 6fck b 6i]`X]b[- ' ,) \$)) +

'Hi hcfg'

B Ua Y	9a U]`	5j U]`UV]`]lm	@cWUhjcb	D\cbY
5bXfYk ?Udcg	UbXfYk "_Udcg4 i bgk "YXi "Ui	H67	H67	H67
Gcb]U'E UX]f	gcgg4 i bgk "YXi "Ui	H67	H67	H67
Ghi hj:6\UhbU[Uf	gcgg4 i bgk "YXi "Ui	H67	H67	H67

%"CB@B9"@97HIF9G"5B8"@95FBB; "57H=J=H=9G

H\]g`Wci fgY`Wcbg]ghg`cZk YY_`m&!\ci f`cb`]bY``YUfb]b['gY[a Ybhgž'k\]W\]bWi XY`U'gYf]Yg`cZa]b]!`YWi fYg VmUWJXYa]WYI dYfhg`Zfca 'h\Y`GW\cc``cZGcW]U``GW]YbWYgž'Ug`k Y```Ug`U'fUb[Y`cZcb`]bY``YUfb]b['UWf]j]h]Yg h\Uha Um]bWi XY`Vf]YZfYgYUfW\`UbX`k f]h]b['H\J_g"'H\Y`a]b]!`YWi fYg`UbX`ch\Yf``YUfb]b['UWf]j]h]Yg`UfY XYg][bYX`hc`gi dd`Ya Ybh]bXYdYbXYbhghi Xmcb`h\Y`Wci fgY`h\UhVY[]bg`fVi hg\ci `X`bchYbXŁ'k]h\`WcgY Yb[U[Ya Ybhk]h\`h\Y`k YY_`mfYei]fYX`fYUX]b[g"'C b`]bY``YWi fYg`UbX``YUfb]b['UWf]j]h]Yg`fi b`Zcf`h\Y Xi fUh]cb`cZHYfa "

&""HI HCF =5@G

Hi hcf]U`g`U``ck 'ghi XYbhg`hc`X]gWi gg`ei Ygh]cbgžh\Ya Yg`UbX`]ggi Yg`Uf]g]b['Z̄ca 'h\Y]f`]bXYdYbXYbhighi Xmž Ug`k Y```Ug`dfcj]X]b['h\Y`cddcfhi b]hmhc`Yb[U[Y`]b`dfcXi Whj Y`X]gWi gg]cb`k]h\`h\Y]f`dYYfg`UbX`hc`dUfh]W]dUhY]b`U`fUb[Y`cZghfi Whi fYX``YUfb]b['UWhj]h]Ygž]bWi X]b[`[fci d#dU]f#|bX]j]Xi U``UbU`mh]WU``k cf_žZcfa U``UbX]bZcfa U``XYVUhYgžei]nnYg`UbX`a]b]!dfcYWg"`Hi hcf]U`g`fi b`Zcf'h\Y`Xi fUh]cb`cZHYfa "`

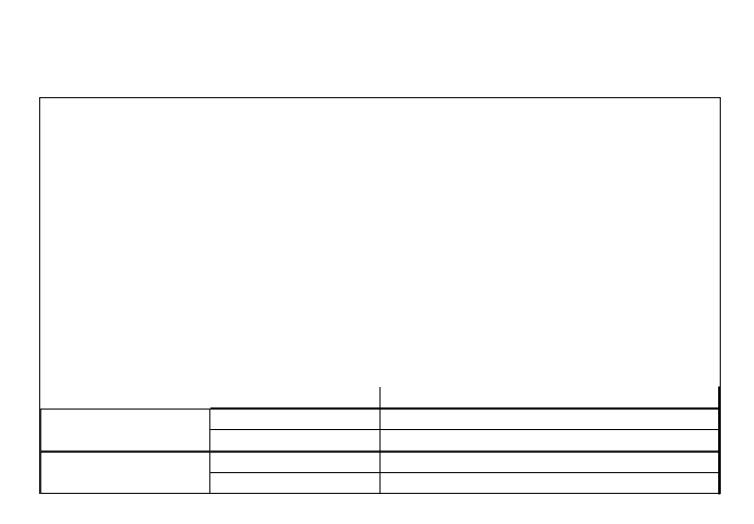
' "'-\$89D9B89BH'@95FB\$; '57H=J +1-9G

±DXYdYbXYbh`YUfb]b['UWfj]h]YgʻfYd`UWf'h hcf]U`gʻ]bʻgca Y`k YY_g"'H\YmUfY`XYg][bYX`hc`ZcghYf`]bXYdYbXYbh gh XmUbX`hc`U``ck 'Zcf`Yb[U[Ya Ybhk]h\ 'X]ZZYfYbhHUg_gʻh\UhWbbchVY'i bXYffU_Ybʻ]b'U'h hcf]U`Ybj]fcba Ybhžgi W\`UgʻWcbXi Wfjb['cb`]bY`fYgYUfW\`cf`k UhW\]b['U'Z]`a "'H\YgY`UWfj]h]YgʻUfY`WYUf`m YI d`U]bYX`VY`ck 'UbX`k]``a cghmVY`ZJWf]hUhYX`VmA ccX`Y"

5ggYgga Ybh

5ggYgga YbhHUg_g

5ggYgga Ybh'hUg_	K Y][\h	



K YY_"+."&, "C WcVYf"!"%	@YWhifY	H\Y'; `cVU``Bi WYUf'H\fYUh	
Bcj Ya VYf	Hi hcf]U`	H\Y'; `cVU``Bi WYUf`H\fYUh	
	5ggYgga Ybh	C b`]bY E i]n	
K YY_', .'('Bcj Ya VYf'!',	@YWn fY	5fY`": fYY`HfUXY`8YU`g""?]``]b['8Yj Y`cda Ybh3	
Bcj Ya VYf	Hi hcf]U`	5fY`": fYY`HfUXY`8YU`g""?]``]b['8Yj Y`cda Ybh3	
K YY_''%%Bcj Ya VYf'! %) 'Bcj Ya VYf	@YWhi fY	B c '@cb[Yf' < Y[Ya cb3'H\Y'F c`Y'cZF i gg]U'UbX 7 \]bU']b'U'7 \Ub[]b['; `cVU`'C fXYf	
	Hi hcf]U`	B c '@cb[Yf' < Y[Ya cb3'H\Y'F c `Y'cZF i gg]U'UbX 7 \]bU']b'U'7 \Ub[]b[';	
K YY_"%\$."%	@YWi fY	DYUWřž7cbZ]WhUbXGHJHY!6i]`X]b[
&& B cj Ya VYf	Hi hcf]U`	DYUWYž7cbZ]WhUbXGHJHY!6i]X]b[
	5ggYgga Ybh	C b`]bY'E i]n	
K YY_'‱'&) 'Bcj Ya VYf'! &- 'Bcj Ya VYf	5ggYgga Ybh	F YgYUfW. '9ggUmXi Y'cb'Hi Y'&* 'Bcj 'Vm&' ") - DA j]U'A ccX'Y"	

Fygci fWyg

DfYgWf]VYX`F Ygci fWYg`

 $\underline{\text{D`YUgY`gYY`A ccX`Y`Zcf``UhYghi dXUhYg`hc`U```UgdYWhg`cZ'h\Y`Wci fgY''}}$

 $\label{thm:local_problem} \mbox{Hi hcf]U``ei Ygh]cbg``UbX``XYhU]`YX`k YY_!Vm!k YY_`fYUX]b[``k]```VY`a UXY``Uj U]`UV`Y`cb``A ccX``Y''`5```cZh\Y$

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

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 i]gii g]b[ih\Yik cfXgicfi]XYUgicZch\YfgiUbXidfYgYbh]b[ih\Ya iUgimci fick b"i±iWUbihU_Yia Ubm Zcfa qžZfca iXYi]VYfUhYiW\YUh|b[ihciUVW]XYbhU`mWcdm]b[iZfca iUigci fWYik]h\ci hUW_bck iYX[Ya Ybh'i

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

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'

7 c``i g]cb. 'k cf_]b['k]th 'cth Yfg'Vi hidUgg]b['cZZth 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_'thc'Ubcth Yf'ghi XYbh'VYZcfY'th Y'Xi Y'XUHYZcf'Zcf'th Y'di fdcgY'cZth Ya

- 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 '= H'F Ygci fWYg'Dc`]Wh
- 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 'gYfj]WYg'UbX `]bZcfa UH]cb'UVci hI BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh\YgY'UfYUg'k]``VY'ZJa]`]Uf'hc'mci žch\Yfg'k]``VY'bYk"'; U]b]b['U'gc`]X'i bXYfgHJbX]b['cZU``h\YfY`UhYX'UgdYWhg'cZ9@&9'k]``\Y`d'mci 'a U_Y'h\Y'a cghicZmci f'ghi X]Yg'UhI BGK "'\\hd.##qi V'YWfi |XYg"`]VfUfm'i bqk "YXi "Ui #\`]qY#JVci hY`]qY

5 WUXYa]W = DZcfa Uhjcb

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

fYei YghgʻZcfʻYl hYbg]cb/ `UhYʻgi Va]gg]cbgʻ[i]XY`]bYg/ fYj]Yk ʻcZa Uf_g/ I BGK ʻ< YUʻh\ 'UbXʻGUZYhmdc`]WJYg/