

# **SOSS3001**

Ei Ubhhuhj Y'GcWlu`F YgYUfW

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

# 7ci fgY<sup>·</sup>Cj Yfj ]Yk

## GhJZZ 7 cbhJWh 8 YhJ] `g

## 7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]hm	@cWUh]cb	D\cbY
7]bXm <ufacb! &gt;cbYg</ufacb! 	W∖Ufa cb! ⁄cbYg4 i bgk "YXi "Ui	VmUddc]bha Ybh	fYa chY	

## Hi hcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cWJhjcb	D\cbY
	Y"gi a a YfY``4 i bgk "YXi "Ui			
Gi a a YfY``				
Gmj]U' <ufa.cb!< td=""><td>g"\Ufa cb! &amp;bYg4 i bgk "YXi "Ui</td><td></td><td></td><td></td></ufa.cb!<>	g"\Ufa cb! &bYg4 i bgk "YXi "Ui			
>cbYg				

### 7ci fgY 8YW] g

7 fYX]hDc]bhg\*\*

Gi a a UfmcZh\Y 7ci fgY

Gi VYWn5fYU. 'GcWJU` F YgYUfWX 'UbX 'Dc`]Wm

H\Y`UV]`]mihc`WcbXi Wh\][\`ei U`]mmei Ubh]hUh]j Y`fYgYUfWX`]g`U`j U`i UV`Y`g\_]```Zcf`gcW]U``gW]Ybh]ghg`UbX`Udd`]YX gcW]U``fYgYUfWXYfg"`H\]g`Wci fgY`cZZYfg`mci `U`XYhU]`YX`]bhfcXi Wf]cb`hc`ei Ubh]hUh]j Y`fYgYUfWX`a Yh\cXg`UbX XUhU`UbU`mg]g"`H\Y`Z[fghdUfhcZh\Y`Wci fgY`Y`UVcfUhYg`cb`a U^cf`h\Ya Yg`]b`fYgYUfWX`XYg][b`fY"["ž a YUgi f]b[`gcW]U``WcbW!dhgžgUa d`]b[`žXUhU`Wc``YWf]cbŁUbX`Wca a cb`WXU``Yb[Yg`fY"["ž[YbYfU`]gUV]`]hmž

#### 5ggYgga Ybh

#### 5ggYgga YbhHUg\_g

5ggYgga Ybh'HJg_	K Y][ \h	8iY'8UHY	Gh XYbh@YUfb]b[ Ci hWca Yg 5ggYggYX
F YgYUfWX 'F Ydcfhi	(\$1	\$*#\$,#&\$&\$`%%\$\$`DA	%Ž Ž( Ž)
GHUHJgHJWgʻHU_Y!\ca YʻHYghgʻ	* \$1		&ž( ž)

#### 5ggYgga Ybh8YHJ]`g

5ggYgga Ybh% F YgYUfWX F Ydcfh

GhUfh'XUhY.

8YW]`q.

H\]g`UggYgga YbhWcbg]ghg`cZU`fYgYUfW\`fYdcfhih\Uh]bWi XYg`U``]hYfUhi fY`fYj ]Yk ža Yh\cX`XYgWf]dh]cbž fYgi `hg`dfYgYbhUh]cb`UbX`XYgWf]dh]cbžX]gWi gg]cb`UbX`WcbWi g]cb`VUgYX`cb`h\Y`Wci fgY`fYgYUfW\`hcd]WUbXXUhU`Wc``YVWfX`Xi f]b[`h\Y`gYa YghYf''

&z) \$\$ k cfXg"H\]g`]g`h\Y`Z]bU``UggYgga YbhZcf`UlhYbXUbVW`di fdcgYg"

Ghi XYbhg·k]``fYWY]jY·k f]hhYb·ZYYXVUW\_'UbX·U'bi a Yf]WU``[fUXY·k]h\]b·hk c·k YY\_g·cZgi Va ]gg]cb·h\fci [\h\Y'I b]j Yfg]hmfg·@YUfb]b[ `A UbU[ Ya YbhGmghYa `f@A GŁ"·H\Y`ZYYXVUW\_`g\YYh#fi Vf]Wk ]```VY`Uj U]`UV`Y`hc qhi XYbhg·Uhih\Y`ghUfhcZh\Y`Wti fqY`qc`h\Uhih\YmWUb`k cf\_`hck UfXq`qdYWZYX`qhUbXUfXq"

 $\label{thm:continuous} \begin{tabular}{ll} Hi & fb \end{tabular} $$ $$ H' \end{tabular} $$ $$ fci [\ 'Hi fb] \end{tabular} $$ found & fci [\ 'Hi fb] \end{tabular} $$ found & fci [\ 'Hi fb] \end{tabular} $$ fci [\ 'Hi fb]$ 

5ggYgga Ybh& GhUhjghjWg hU\_Y!\ca Y hYghg

GHJfh'XUhY.

8YHJ]`g.

H\]g`UggYgga Ybhk ]```Wcbg]ghYbhcZZci f`hU\_Y!\ca Y`hYghg"`9UW\`cbY`k ]```fYei ]fY`ghi XYbhg`hc`gi Va ]hi-6A GDGG`GhUh]gh]Wg`fGrUh]gh]WD``GcZk UfYŁ'ci hdi hid`i g`%) \$`k cfXg`cb`h\Y]f`]bhYfdfYfUh]cb`cZk \Uhh\Y ci hdi hid`i g`%) \$`k cfXg`cb`h\Y]f`]bhYfdfYfUh]cb`cZk \Uhh\Y ci hdi hid`i g`%)

Ghi XYbhgʻk]``fYWY]jYkf]hhYbʻZYYXVUW\_'UbX'Uʻbi a Yf]WU``[fUXYk]h\]bʻhkcʻkYY\_gʻcZgi Va ]gg]cbʻh\fci [\h\Y`I b]j Yfg]hmfgʻ@YUfb]b[ʻA UbU[Ya YbhGmghYa `fl@A GŁ"'H\Y`ZYYXVUW\_'g\YYh#fi Vf]Wk]```VY`Uj U]`UV`Y`hc ghi XYbhg`Uhh\Y`ghUfhcZh\Y`Wci fgY`gcʻh\Uhh\YmWUb`kcf\_'hckUfXgʻgdYW]ZYX`ghUbXUfXg"

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

 $GYY'h Y'k YY\_`mgVXYXi `Y'Zcf'h Y'Xi Y'XUhYg'cZh Y'( `hU\_Y' \ca Y'hYghg''$ 

 $\label{thm:continuous} \mbox{Hi fb]h]b$'gYh]b$[.$'H\]g$'Ugg][ba Ybh]g$'gi Va]hhYX'h\fci [\'Hi fb]h]b$'UbX'ghi XYbhg`WUb'gYY'Hi fb]h]b$'g]a]'Uf]hm fYdcfhg"$ 

## 5 hm/b XUb VW F Yei ]fYa Ybhg

 $\hbox{Ghi XYbhg'UfY'ghfcb[`mYbWci fU[YX'hc'UhhYbX'U```WUggYg'UbX'fYj]Yk ``YWhi fY'fYWcfX]b[g''] } \\$ 

## 7ci fgY GWX YXi `Y

### J]Yk 'WUgg'hja YhUV'Y

### H]a YtUV`Y

8 UHY	HmdY	7 cbHYbh
K YY_'\$.'&) 'A Um'!'&-		
A Um		
K YY_'% '%'>i bY '! ') '>i bY	@YWn fY	! K \Uh]gʻei UbhhUhj YʻfYgYUfW.3
		! "A YUgi f]b[ 'gcW]U``WcbWYdhg
		FYUX]b[7\UdhYf%
	Hi hcf]U`	!'±blfcXiWMjcb'hc'GDGG
		! GifjYmZcf7cifgYDfcYWh
K YY_'&.', '>i bY'!'%& >i bY	@YWhi fY	! GUa d`]b[
		!; fUd\]WJ`X]gd`UmcZXUHJ
		! 'F YUX]b[ g. '7 \ UdhYfg'&'UbX''
	Hi hcf]U`	! `C VhU]b]b[ `ZfYei YbWmhUV`Yg`UbX`[ fUd\g
K YY_" ."%) ">i bY"!"% >i bY	@YWhifY	! 8 YgWf]dhjj Y ghUhjghjWg
		! F YUX]b[ . '7 \ UdhYf'(
	Hi hcf]U`	! '8 YgWf]dh]j Y 'ghUh]gh]Wg ']b 'GDGG
K YY_'(.'&&'>i bY'!'&* >i bY	@YWhifY	! 'DfcVUV]`]miUbX`\mdch\Yg]g`hYgh]b[
		! 'F YUX]b[ . '7 \
	Hi hcf]U`	! '8 Uhu'dfydUfUhjcb'UbX'VWUb]b[
	5ggYgga Ybh	HU_Y`\ca Y`hYgh; %`8YgWf]dhji Y`ghUhjghJWg`Xi Y`: f]XUm
	33 33	&( '>i bYž'%da
K YY_').'&-'>i bY'!'' '>i `m	@YWhifY	! 7 cffY`Ufjcb
		! 'F YUX]b[ . '7 \UdhYf',
	Hi hcf]U`	! '7 cbXi Whjb[ 'WcffY`Uhjcbg']b'GDGG
K YY_'*.'*'>i `m'!'%\$'>i `m		!:: "YI]V]`]lmik YY_ž'bc`"YWhifY'cf'hihcf]U`g
K YY_'+.'%' '>i `m'!'%+'>i `m	@YWnifY	! 7 \]!gei UfY
		! F YUX]b[ . '7 \Udh/f'-
	Hi hcf]U`	! '7 cbXi WMb[ 'WX]!gei UfY']b'GDGG
	5ggYgga Ybh	HU_Y`\ca Y`hYgh; & '7 cffY`UhJcb`Xi Y`: f]XUm'%) '>i `m
	<u> </u>	

K_YY', .	@YWnifY	! Ghi XYbhfgi hihYgh
		! `F YUX]b[ . `7 \Ud <b>h</b> Yf')
	Hi hcf]U`	! '7 cbXi Wjb[ 'hh/gh]b GDGG
	5ggYgga Ybh	HU_Y`\ca Y`hYgh;'.`7\]`gei UfY`Xi Y`: f]XUm&&`>i `m ‰da
K YY_''&+'>i `m!'' %'>i `m	n@YWhifY	! '5bU`mg]g'cZj Uf]UbWY 'fБВСЈ5Ł
		! `F YUX]b[
	Hi hcf]U`	! '7 cbXi Whb[ '5BCJ5']b'GDGG
	5ggYgga Ybh	HU_Y`\ca Y`hYgh; (.`h'hYghXi Y`: f]XUm&-`>i `m'%da
K YY_'%\$.'' '5i [i gh!'+ 5i [i gh	@YWn fY	l'DU]fYX'hihYgh
		!`=bhYfdfYh]b['UbX'dfYgYbh]b['fYgi `hg
		! `F YUX]b[ . `7 \UdhYf`+
	Hi hcf]U`	! '7 cbXi Wjb[ 'dU]fYX'h'hYgh
		! '5D5'Zcfa Uh
	5ggYgga Ybh	! `F YgYUfW\ `F Ydcfh `: ]bU``dfc YWhXi Y`H\i fgXUm * `5i [i gh'%da

#### FYgci fWyg

#### DfYgWf]VYX F Ygci fWYg

? bUddž'< "`f&\$%+Ł"`=blfcXi WcfmGlUhjqhJWg'I g]b[ 'GDGG'f&bX'9X]hjcbŁ"'H\ci gUbX'C U\_qž'75. 'GU[Y"

#### FYWca a YbXYX FYgci fWYg

H\Y'Zc``ck]b['hkc'Vcc\_g'UfY'VYghgY``]b['`'WUgg]Wg''h\Uh'UfY'\][\`mfYWcaaYbXYX'Zcf'Ubm'gh XYbhg'k\ckUbh'acfY'VUW\_[fcibX']bZfcaUh]cb'cf'YlUad`Yg'cb'h\Y'ghUh]gh]WU`'hYW\b]eiYg'kY'k]```VY``YUfb]b['''H\YmVch\`\UjY'ai`h]d`Y'YX]h]cbg'UbX'mci'WUb'cZhYb'Z]bX'igYX'Wcd]Yg'cZdfYj]cig'YX]h]cbg'h\Uh'UfY'fYUgcbUV`mdf]WYX''

5bmi9X]hjcbifi dihoih\Yi\*h\i9X]hjcbibck EcZ>ii]YiDU``UbhfgiGDGG'Gifj]j U``A Ubi U`. 'DU``Ubhfz'>"'f&\$%\*E"'GDGGGifj]j U``A Ubi U`. 'DU``Ubhfz'>"'f&\$%\*E"'GDGGGifj]j U``A Ubi U`"'A W fUk!<]```9Xi WUhjcbifl?E"

5bm9X]h]cbifidirci) h\i9X]h]cbibck \(\text{25bXm}:\] Y\iXfg\(\text{8}\) g\(\text{6}\) Y\f]b[\(\text{GDGG}.\);\] Y\iX\(\text{25bXm}:\] Y\iX\(\text{25bXm}:\

\hdg.#kkk"X]gWcjYf]b[ghUh]gh]Wg"Wca#

7ci fgY 9j U'i Uhjcb UbX 8Yj Y'cda Ybh

# Gi Va ]gg]cb cZ5ggYgga YbhHUg\_g Hi fb]h]b Gi Va ]gg]cb

-Zmci 'YbWci bhYf'U'dfcV`Ya 'k \Yb'UhhYa dh]b[ 'hc'gi Va ]hmci f'Ugg][ ba Ybhh\fci [ \'Hi fb]h]bž'd`YUgY hY`Yd\cbY'9I hYfbU``Gi ddcfhcb'-',)'''' %cf'Ya U]`'h\Ya 'cb'YI hYfbU`hY`hgi ddcfh4 i bgk "YXi "Ui '"'Gi ddcfh

## 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.



### 5 WUXYa ]W + DZcfa Uh]cb

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

- fYei YghgʻZcfʻYl hYbg]cb/
- `UhY`gi Va ]gg]cbg`[ i ]XY`]bYg/
- fYj ]Yk 'cZa Uf\_g/
- I BGK < YU`h\ "UbX GUZYmdc`]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

,

a U[Y'7fYX]h

GmbYf[]Yg^]b^GcibX^&\$%\*