

MODL5107

HfUbg`Uhcb'HYW\bc`c[m

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

7ci fgY'Cj Yfj]Yk

'GhJZZ'7cbhJWh'8YhJ]`g'

'7cbj Ybcfg'

BUa Y	9a U]`	5j U]`UV]`]m	@cWJhjcb	D∖cbY
GhYd\Yb^8c\Yfhm	g"Xc\Yfhm4 i bgk "YXi "Ui	K YXbYgXUmg'&—'	A cfj Yb 6fck b	Ž*%'&'-',)
			&* *	%' &'

'@YWhi fYfg'

BUa Y	9a U]`	5j U]`UV]`]lm	@cWJhjcb	D\cbY
GhYd\Yb^8c\Yfhm	g"Xc\Yfhm4 i bgk "YXi "Ui	K YXbYgXUmg'&-'	A cfj Yb 6fck b	Ž*%'&'-',)
			&* *	%' &'

'Hi hcfg'

B Ua Y	9a U]`	5j U]`UV]`]lm	@cWUh]cb	D\cbY
GhYd\Yb [*] 8c\Yfhm	g"Xc\Yflm4 i bgk "YXi "Ui	0 0	A cfj Yb 6fck b &* *	Ž*%'&'-',) %'&'

GWXcc`7cbHJWhi±bZcfa Uh]cb

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

@c\\Ulrighthgaper: G\\\cc``C\\Z\\\Y\\Z\A\\cfj\Yb'6fck\b'6i\]\\X]b[\\Z'\@Yj\Y\`\&\Z'\&),

 $\texttt{CdYb]b[} \ \, (\texttt{cifg.} \ \, \texttt{AcbXUm!} \ \, (\texttt{f]XUm\'z} \ \, (\texttt{Ua} \ \, (\texttt{I})) \ \, \texttt{da}$

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

♣ 'h\]g'Wci fgYz'mci 'k]``XYj Y`cd'h\Y'bYW'ggUfmg_]``g'hc'k cf_'YZZYWfj Y`mk]h\'W htjb[!YX[Y'hfUbg`Uh]cb hYW\bc`c[]Ygz']bWi X]b['Wca di hYf!Ugg]ghYX'hfUbg`Uh]cb'hcc`g'UbX'a UW\]bY'hfUbg`Uh]cb''Mci 'k]```YUfb'\ck hc'i gY'WcbhYa dcfUfmihfUbg`Uh]cb'hYW\bc`c[]Yg']b'Wca d`YI 'dfcZYgg]cbU`'dfc YW\g'hc'a YYhW]YbhibYYXg'''Mci k]``'UWei]fY'h\Y'bYW'ggUfmWcbhYI hi U``_bck `YX[Y'UbX'g_]``g'hc 'Wf]h]WU``mYa d`cmihfUbg`Uh]cb'hYW\bc`c[]Yg'hc U'fUb[Y'cZfYU'!k cf'X']bX]j]Xi U``UbX'[fci d!VUgYX'gW\bUf]cg']b'h\Y'`Ub[i U[Y'gYfj]W\g']bXi ghfm''Mci 'k]``U'gc'XYj Y`cd'dfcV'Ya!gc'j]b['UbX']bhYfW' 'hi fU`'Wca a i b]WUh]cb'g_]``g']b'h\Y'WcbhYI hcZUi h\Ybh]WhfUbg`Uh]cb'dfc YWha UbU[Ya Ybh''

7 ci fgY @YUfb]b[Ci hWca Yg

- %"]XYbfjZmUbX`cj YfWca Y`hYW\bc`c[]WU``W\U``Yb[Yg`]b`hfUbg`Uh]cb`VUgYX`cb`fYgYUfW\`UbX`]bXi ghfm VYghidfUWfW
- &" Udd`mdfUWf)WU``g_]``g`]b'd`Ubb]b[ži g]b[ž'UbX`UXj]g]b['cb'ffUbg`Uf]cb'fYVXbc`c[]Yg
- ' " i gY`WcbhYl hi U``_bck `YX[Y`hc`gi WWfggZl``mk cf_`k]h\`hfUbg`Uhjcb`hYW\bc`c[m]b`h\Y``Ub[i U[Y gYfj]WYg`]bXi ghfm
- ("kcf_`YZZYWNjY`m`]b`U`Wc``UVcfUhjY'ai`hj`]b[iU``hYUa
-) " Yj U`i UHY 'h\Y`fc`Y`cZa UW\]bY 'HfUbg`UH]cb`]b'h\Y`WcbHYI hcZh\Y``Ub[i U[Y`gYfj]\W'g`]bXi gHfm

HYUWX]b[GhfUhY[]Yg

+D "YWhi fYgžghi XYbhg "YUfb "UVci hh\Y WcbhYlh\$

% \]b['G\f\U\f\'[

5ggYgga Ybh

- D`YUgY Ybgi fY 'h\Uhmci 'Vf]b['U``Udhcdž'hUV`Yhž'cf'ga Ufhd\cbY 'hc'YUW\``YWh fY'gc'h\Uhmci 'WUb Wca d`YhY'YUW\'k YY_mei]n']b'A ccX`Y'Xi f]b['h\Y``YWh fY'h]a Yž'UbX'dUfh]W]dUhY'Z ``m']b'U```cZh\Y `YWh fY'UW]j]h]Yg"
- Hc 'VYghdfYdUfY 'Zcf'5ggYgga Ybhg'&'UbX'' ž'd`YUgY'UhhYbX'Uh`YUghcbY'k cf_g\cd'UbX'cbY'cbY!cb! cbY'Wcbgi 'hUh]cb'cb'UWUXYa]Wk f]h]b['Uhh\Y'I BGK '@YUfb]b['7 YbhfY. '\hd.#k k k "'Wi bgk "YXi "Ui #
- 5a Yf]WUb DgmWXc`c[]WU``5ggcW]Uh]cb 'f5D5Ł'fYZYfYbW]b[']g'i gYX']b 'U```UggYgga Ybhg']b 'h\]g'Wci fgY.'\hd.#ghi XYbh'i bgk "YXi "Ui #JdU

5ggYgga Ybh'HUg_g'

5ggYgga Ybh'tUg_	K Y][\h	8iY'8UHY	Gh XYbh@YUfb]b[Ci hWca Ygʻ5ggYggYX
Ei]n'	&\$ı	8 i f]b[``YWi fY'h]a Y'YUW k YY_	&Ž
A cW_'lfUbg`Uh]cb'dfc^YWh	(\$1	\$) #\$(#&\$% `\$(.\$\$`DA	%ž&ž ž(
A UWX]bY`lfUbg`Ulf]cb`dfcYWli	(\$1	&*#\$(#&\$% `\$(.\$\$`DA	%ž&Ž Ž)

5ggYgga Ybh8YHJ]`g

5ggYgga Ybh'% Ei]n

GHJfhiXUhY. 8i f]b["YWhi fY h]a Y YUWX k YY_

@Yb[h\. &\$ fUbXca]nYX]hYa g'dYf'k YY_

8YHJ]`g. Ei]n`WcbHJb]b[`&\$`fUbXca]nYX`]hYag`Zfca``YWhifY`WcbhYbh'UbX`fYei]fYX`fYUX]b["`Kf]hhYbZYYXVUW_'dfcj]XYX`cb'ei]n`]hYag`k]h\`cfU``X]gWigg]cb`]b`giVgYeiYbh`YWhifY''

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

D`YUgY`Ybgi fY`f\\Uh'mci `Vf]b[`U``Udhcdž'HUV`Yhž'cf`ga Ufhd\cbY`hc`YUW\``YWhi fY`gc`f\\Uh'mci `WUb`Wca d`YhY YUW\`k YY `mei]n`]b`A ccX`Y`Xi f]b['f\\Y``YWhi fY`Ha Yž'UbX`dUfh]W|dUhY`Z ``m]b`U```cZh\Y``YWhi fY`UWhj]h]Yg"

Gi Va]gg]cb'bchYg.D`YUgY'gYY'A ccX`Y'Zcf'h\Y']bghfi Wh]cbgžfYgci fWYgž'UbX'a Uf_]b['Wf]hYf]U'Zcf'h\]g UggYgga Ybh'

Hi fb]hb qYhhb[. H\]q]q bchU Hi fb]hb Uqq][ba Ybh

5ggYgga Ybh& AcW hfUbg`Uhjcb dfc YWh

GhUfhXUhY. Bch5dd`]WUV`Y

@Yb[h\. '&ž\$\$\$'-'&ž)\$\$'k cfXq

8YHJ]`g. '5 'a cW_'lfUbg`Uh]cb'dfc^YWhWcbHJ]b]b[']bX]j]Xi U``UbX`[fci d!VUgYX`Y`Ya Ybhg.D\UgY`%'; fci d!VUgYX`dfc^YWhd`Ub'f&\$i \LD\UgY`&'; fci d!VUgYX`dfc^YWhXY`]j Yfmk]h\`cfU``dfYgYbHJh]cb'f\%i \L'UbX

]bX]j]Xi U`fYZYWIjcb`f%\$i - k; fci d!VUgYX`ZYYXVUW_`]g`dfcj]XYX`]b`k f]hhYb`UbX`cfU``Zcfa `Zcf`D\UgY`%`UbX`&" =bX]j]Xi U``k f]hhYb`ZYYXVUW_`]g`dfcj]XYX`Zcf`h\Y`]bX]j]Xi U``fYZYWIjcb`]b`D\UgY`&"`

Gi Va]gg]cb bchYg. D`YUgY gYY A ccX`Y Zcf'h\Y]bghfi WhcbgžfYgci fWrgž'UbX a Uf_]b['Wf]hYf]U Zcf'h\]g UggYgga Ybh'

 $\label{thm:limit} \begin{tabular}{ll} Hi fb]h]b gYh]b[. Hi]g Ugg][ba Ybh]g gi Va]hYX h fci [\ 'Hi fb]h]b UbX ghi XYbhg WUb gYY 'Hi fb]h]b g]a] Uf]hm fYdcfhg"$

5ggYgga Ybh' . A UW]bY hfUbg Uh]cb dfc YWh

GhUfhXUhY. Bch5dd`]WUV`Y

@Yb[h\. &ž\$\$\$ - &ž) \$\$ k cfXg

 $8 \ YhU] \ "g. 5b" \ Yad \ d]f] \ WW \ [b" \ HV] \ [$

Gi Va]gg]cb bchYg. D`YUgY 'gYY 'A ccX`Y 'Zcf'h\Y ']bghfi WhjcbgžfYgci fWYgž'UbX 'a Uf_]b['Wf]hYf]U 'Zcf'h\]g UggYgga Ybh'

 $\label{eq:higher} \textbf{Hi fb]hjb'gYhjb[.'H\]g'Ugg][ba Ybh']g'gi Va]hhYX'h\fci [\''Hi fb]hjb'UbX'ghi XYbhg'WUb'gYY'Hi fb]hjb'g]a]`Uf]hm fYdcfhg''$

5 https://bxubww.Fyei]fyaybhg

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

7ci fgY'GWXYXi `Y

J]Yk 'WUgg'hja YhUV'Y

H]a YtUV`Y

HmdY	7 cbhYbh
@YWhifY	⇒hfcXi Whjcb hc``Ub[i U[Y'UbX'hfUbg`Uhjcb
	hYWkbc`c[]Yg
Hi hcf]U`	7 ca di lYf!Ugg]g\YX'lfUbg`Uljcb'lcc`g. 6Ug]W
	₫ bWgcbg
FYUX]b[FYUX]b['gYei YbW' '%
@YWnifY	HfUbg`Uhjcb`dfc^YWia UbU[Ya Ybh`D`Ubb]b[`UbX YI YW hjcb
Hi hcf]U`	7 ca di hYf!Ugg]ghYX'hfUbg`Uh]cb'hcc`g.'K cf_]b['k]h\dfcYWg'UbX'dYYfg
F YUX]b[F YUX]b['gYei YbW' &
@YWnifY	HfUbg`Uhjcb'dfc'YWha UbU[Ya Ybh'K fUd!i d'UbX XY`]j Yfm
Hi hcf]U`	7 ca di hYf!Ugg]ghYX'hfUbg`Uh]cb'hcc`g.'K fUd!i d'UbX XY`]j Yfm
F YUX]b[F YUX]b['gYei YbW''
@YWhifY	HfUbg`Uhjcb'ei U`jlm'UbX'jlg'UggYgga Ybh
Hi hcf]U`	7 ca di hYf!Ugg]ghYX'hfUbg`Uh]cb'hcc`g.'HfUbg`Uh]cb ei U`]hmUggYgga Ybh
F YUX]b[F YUX]b['gYei YbW' (
	K \mi]g'lfUbg'Uh]cb'X]ZZJW'hZcf'Wca di hYfg3
Hi hcf]U`	A UW.]bY'hfUbg`Uhjcb'hcc`g.'HfUbg`Uhjcb'ei U`]hm UggYgga Ybh
F YUX]b[F YUX]b['gYei YbW')
@YWhi fY	<pre>< Ymž·G]f]"""C_ž; cc[`Y"""5fh]Z]W]U``]bhY``][YbWY`UbX `Ub[i U[Y`dfcWfgg]b[</pre>
Hi hcf]U`	91 d`cf]b['UbX'Yj U`i Uh]b['Ufh]Z]W]U``]bhY``][YbWY`]b `Ub[i U[Y'UbX'hfUbg`Uh]cb'hYW\bc`c[]Yg
F YUX]b[F YUX]b['gYei YbW'*
@YWnifY	6YZcfY`UbX`UZhYf.`@ b[i]gh WdfY!dfcW/gg]b[`UbX`dcgh YX]h b[
Hi hcf]U`	7 fYUŋb[žYl YW ŋb[ž'UbX'Yj U'i Uŋb[']bhYfj Ybŋcbg Zcf'dfY!dfcWyg]b['UbX'dcgHYX]ŋb[
FYUX]b[F YUX]b['gYei YbW'+
5ggYgga Ybh	5ggYgga Ybh'& 'HfUbg`Uhjcb'a Ya cfmdfc'YWif(\$1 Ł Xi Y'cb'5df]`') h\ 'Uh'('da
	3 /
	ey Whi fy Hi hcf]U` F YUX]b[ey Whi fy

	Hi lcf]U`	91 d`cf]b['UbX'Yj U`i Uh]b['UXj UbW'X'`Ub[i U[Y'hcc`g UbX'fYgci fWfg
	FYUX]b[FYUX]b['gYei YbW',
K YY_''%) '5df]`'!'&%	@YWhifY	H\Y`[fUXi UhY`a Uf_YhcZhcXUmUbX`hca cffck
5df <u>]</u> `	Hi hcf]U`	DfYdUfUhjcb Zcf 5ggYgga Ybh' . A UWX jbY hfUbg`Uhjcb dfc YWh
	FYUX]b[FYUX]b['gYei YbW' -
K YY_"%\$."&&"5df]"!"&,	FYUX]b[FYUX]b['gYei YbW' '%\$
5df <u>]</u> `	5ggYgga Ybh	5ggYgga Ybh' . 'A UW\]bY'HfUbg`Uh]cb'dfcYWif(\$i Ł Xi Y'cb'5df]`'&*h\'Uh'('da

F Ygci fWYg

DfYgWf]VYX F Ygci fWYg

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

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

Image: Ybwci bhYf'U'dfcV'Ya k \Yb'UhYa dhJb['hc'gi Va]hmci f'Ugg][ba Ybht\fci [\ 'Hi fb]hJbž'd'YUgY

HY'Yd\cbY'9| hYfbU''Gi ddcfhcb'-',) '' ' ' %cf'Ya U] 'h\Ya 'cb'Y! hYfbU'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'mYUfŁ" Image:

UfY'i bUV'Y'hc'gi Va]hmci f'Ugg][ba YbhXi Y'hc'U'ZJi 'hk]h\ 'Hi fb]hJb'mci 'a UmUdd'mZcf'Ub'Y! hYbg]cbž'Vi hmci
a i ghfYhJ]b'mci f'hJW_Yhbi a VYf'Zfca '9! hYfbU''Gi ddcfhfU'cb['k]h\ 'Ubmch\Yf'fY'Yj UbhXcW a YbhgŁ'hc
]bWi XY'Ug'Yj]XYbW' 'hc'gi ddcfhmci f'Y! hYbg]cb'Udd']WUh]cb" Image: Ya U]''9! hYfbU''Gi ddcfhmci 'k]''

Ui hca UhJWJ''mfYW'] Y'U'hJW_Yhbi a VYfž'Vi h]Zmci 'hY'Yd\cbY'mci 'k]'''bYYX'hc'gdYWJZWJ''mUg_'Zcf'cbY"

Hi fb]hJb'U'gc'dfcj]XYg'i dXUhYg'cb'h\Y]f'gmghYa 'ghUh' g'cb'Hk]hYf"

; YbYfU``mž'UggYgga YbhiHug_g'a i ghVY'gi Va]hhYX'Y`YVWfcb]\W)``mj]U'Y]h\Yf'Hi fb]hjb'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`hYfbUhj Y'gi Va]gg]cb'XYHJ]`g''

: cf´]bZcfa Uh]cb`cb`\ck `hc`gi Va]hUgg][ba Ybhg`cb`]bY`j]U`A ccX`Y.`\hdg.#gh XYbh'i bgk "YXi "Ui ≯\ck! gi Va]hUgg][ba Ybha ccX`Y

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[žgi a a Uf]g]b[žYggUmk f]h]b['UbX h]a Y a UbU[Ya Ybh
- 5ddfcdf]UhY'i gY'cZUbX'Uhtf]Vi h]cb'Zcf'U'fUb[Y'cZa UhYf]U`g']bWi X]b['hYl hž']a U[Ygž'Zcfa i `UY'UbX WcbWYdhg"

- 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 '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±bZcfa Uhjcb

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