



# LING5029

H\Y`Dgm\Xc`c[ mcZ@Ub[ i U[ Y

HYfa `Hk c` `##`&\$&%

7ci fgY`Cj Yfj JYk

GHJZZ'7cbHJW`8YHU]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]UV]`]m	@cWU]cb	D\cbY
G]hYa V]b_cg]8i VY	g"Xi VY4 i bgk "YXi "Ui	6mUddc]bha Ybhj ]U Y!a U]`	A cfj Yb`6fck b	6m Uddc]bha Ybh j ]U`Y!a U]`

@YW`i fYfg

B Ua Y	9a U]`	5j U]UV]`]m	@cWU]cb	D\cbY
G]hYa V]b_cg]8i VY	g"Xi VY4 i bgk "YXi "Ui	6mUddc]bha Ybhj ]U Y!a U]`	A cfj Yb`6fck b	6m Uddc]bha Ybh j ]U`Y!a U]`

GWXcc``7cbHJW`bZcfa Uh]cb

GWXcc``cZ<i a Ub]h]Yg`UbX`@Ub[ i U[ Yg

@cWU]cb. 'GWXcc``C Z]W`ZA cfj Yb`6fck b`6i ]X]b[ ž`@Yj Y``&ž&),

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

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9a U]`. [\U`4 i bgk "YXi "Ui](#)

7ci fgY'8YHJ)`g

7fYX]hDc]bHg`\*`

Gi a a UfmicZhY'7ci fgY

H\Y'dgmWxc`c[ micZ`Ub[ i U[ Yžcf'dgmWxc`]b[ i ]gh]Wgž]g`hY'gWYbh]Z]Wgh XmicZhY'fY`Uhc]bg\]d`VYrk`YYb`  
`Ub[ i U[ Y`UbX'dgmWxc`c[ m`H\Y'a`cfY`mci`i`bXYfgHUbX`UVci`hH\Y'dgmWxc`c[ micZ`Ub[ i U[ Yž`ck`h]g`  
UWéi`]fYXž`UbX`\ck`h]g`dfcWggYXž`hY'a`cfY`mci`i`bXYfgHUbX`UVci`hmc`i`fgY`ZUbX`hY`dYcd`Y`UbX`  
k`cfX`Ufci`bX`mci`" `b`h`lg`Wéi`fgYž`mci`k`j`"YUfb`\ck`k`Y`UWéi`]fYž`XYj`Y`cdž`UbX`i`gY`Ub[ i U[ Y`]b[ `YbYfU`  
UbX`gdYW]U`]gYX`Wé`bhY`lg`"ó`mXYj`Y`cd]b[ `Ub`i`bXYfgHUbX]b[ `cZWé`bhYa`dcfUfmfYgYUfW`a`Yh`cXgž]bW`X]b[  
`Ub[ i U[ Y`dYfZcfa`UbW`hUg`gž`Ym`fUW`]b[ `UbX`VfU]b`]a`U[ ]b[ ž`mci`k`j`"XYbh]Zm`hY`fY`Uhc]bg\]d`VYrk`YYb`  
`Ub[ i U[ Yž`Wé[ b]h]cbž`UbX`VY`Uj`]ci`f`Mci`k`j`"Yj`U`i`UH`hY`Udd`]W]h]cb`cZj`Uf]ci`g`Z`bXUa`YbH`UddfcUW`Yg`  
]b`dgmWxc`]b[ i ]gh]Wgž`h`]XYbh]Zm`ck`hY`mi`UWéi`bhZc`f`hY`dgmWxc`c[ ]W]`dfcWggYg`i`bXYf`m]b[ `hY`  
dfcXi`W]h]cbž`dfcWgg]b[ `UbX`fYdfYgYbH]h]cb`cZ\i`a`Ub`Ub[ i U[ Y`"Mci`k`j`"Ugc`Yi`d`cfY`Uhd]W]`Ub[ i U[ Y`  
XYj`Y`cda`Ybž`Ub[ i U[ Y`]a`dU]fa`Ybž`UbX`W]b]W]`Wé`bhY`lg`"

7ci fgY`@YUfb]b[ `Ci hWca Yg

%`XYgW]VY`UbX`Yi`d`U]b`hY`a`cghWfi`W]U`"ggi`Yg`]bj`c`j`YX`]b`hY`]bhYfUW]h]cb`VYrk`YYb`hY`VfU]b`UbX`  
`Ub[ i U[ Y`]b`fY`Uhc]b`h`ck`"Ub[ i U[ Yg`UfY`UWéi`]fYXž`dfcWggYX`UbX`g`h`fYX`"  
&`Udd`m[ YbYfU`df]bW]d`Yg`cZ`]b[ i ]gh]Wgž`h`"Ub[ i U[ Y`UWéi`]g]h]cbž`Ub[ i U[ Y`Wéa`dfY`Ybg]cb`UbX`  
dfcXi`W]h]cbž`UbX`h`Uddcg]h`bYi`fc`c[ ]W]`dfcWggYg]bj`c`j`]b[ `Ub[ i U[ Y`  
'`"Yi`d`]W]h`hY`VUg]WfYgYUfW`cb`VfU]b`XUa`U[ Y`UbX`"Ub[ i U[ Y`]a`dU]fa`Ybž`VfYU`Xck`b`UbX`"cgž`  
UbX`"Ub[ i U[ Y`UbX`h`ci`[ `h`  
(`"W]h]W]`mYi`Ua`]bY`UbX`Yj`U`i`UH`a`cXYfb`UddfcUW`Yg`]b`dgmWxc`]b[ i ]gh]Wgž`]b`hY`fa`g`cZ`hY`]f`dck`Yf`  
h`UWéi`bhZc`f`hY`dgmWxc`c[ ]W]`dfcWggYg`i`bXYf`m]b[ `hY`dfcXi`W]h]cbž`dfcWgg]b[ `UbX`  
fYdfYgYbH]h]cb`cZ\i`a`Ub`"Ub[ i U[ Y`"

HYUWx]b[ `GhfUH[ ]Yg`

H\]g`Wéi`fgY`i`gYg`Ub`]bhYfUW]j`Y`gYa`]bUf`Zcfa`Uh`c`]b]fcXi`W`hY`VUg]W]Wé`bW`dh`U`X]gh]bW]h]cbg`UbX`  
dfYgYbh`hY`Z`bXUa`YbH`"fYgYUfW`k`YfY`hY`"YW`fYf`k`j`"YbXYUj`ci`f`h`a`U`\_Y`cf][ ]bU`h`W`b]W]`fYgYUfW`  
a`cfY`a`UbU[ YUV`Yž`" \

5ggYgga Ybh

5ggYgga YbhHUg\_g

5ggYgga YbhHUg_	K Y][ \h	8i Y'8UH	Gh XYbh@YUfb]b[ Ci hWta Yg'5ggYggYX
DfcV`Ya `gYh	&)	% #*\$ #&\$&%\$(. \$\$`DA	%ž(
!WUgg`hYgh	&)	Bch5dd`]WVY	%ž'&ž'
DfYgYbhU]cb`	%\$	5g`fcgh`fYX	%ž'
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5ggYgga Ybh8YHJ]`g

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GhUfhXUH%#\*\$ #&\$&%\$(. \$\$`DA

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Gh XYbhg`k ]`VY`fYei ]fYX`hc`UbU`mgY`gca Y`WUgY`gh X]Yg`f!%`dfcV`Ya gE]b`fY`U]cb`hc`dUfh]W`Uf`Yg]  
dgmWxc`]b[ i ]gh]W]ggi Yg" H\Ymk ]`UXXfYgg`h\YgY`]ggi Yg`VmUbgk Yf]b[ ] YfmgdYW]Wei Ygh]cbg`XYg][ bYX`hc

%o

8YHJ`g.

!%`a ]bi h`g" Gh XYbth`k ]`VY`Ugg][ bYX`U`dfYgYbth]cb`cb`U`gdYWZ]Wwci fgY`td]W

Gi Va ]gg]cb`bcH`g. `DfYgYbth]cb`Ug`fcgH`fYX`UbX`gh XYbth`a i ghgi Va ]h`hY]f`Dck YfDc]bthg`]XYg`VYZ`fY`h`Y]f`gW`X`i`YX`dfYgYbth]cb

Hi fb]h]b`gYH]b[ . H`g]Ugg][ ba Ybh]g`gi Va ]h`X`h`fci [ \ `Hi fb]h]b`UbX`gh XYbth`Xc`bchgYY`Hi fb]h]b`g]a ]Uf]m`fYdcfth`"

5ggYgga Ybh( . `9ggUm

GhUfhXUHY. `Bch5dd`]WV`Y

@Yb[ h. `5ddfc] ]a UH`m&Z) \$\$`k`cfXg

8YHJ`g.

H`g]g`h`Y`Z]bU`UggYgga Ybh`&) \$\$`k`cfXg" K`f]h`b`Z`Y`X`V`U`W`" H`g]g`h`Y`Z]bU`UggYgga Ybh`Z`f`U`h`Y`b`X`U`b`W`di`fdcgYg"

Hi fb]h]b`gYH]b[ . H`g]Ugg][ ba Ybh]g`gi Va ]h`X`h`fci [ \ `Hi fb]h]b`UbX`gh XYbth`W]b`g`Y`Y`Hi fb]h]b`g]a ]Uf]m`fYdcfth`"





## F Ygci fWg

### DfYgWf]VYX`F Ygci fWg`

D`YUgY`fYZf`hc`h\Y`F YUX]b[ `GYei YbWg`i]b\_`cb`A ccX`Y`Zcf`XYHJ]g`cZYUW`k`YY\_`fYei`]fYX`fYUX]b[ ``5``  
fYUX]b[ g`UfY`Uj`U]UV`Y`j`]U`A`ccX`Y`UbX`h\Y`i`BGK` `@]VfUfm`

- <cZz`9``f&\$%(`E``@Ub[ i U[ Y`XYj`Y`cda`Ybhf) h`YX`E``6Y`a`cbh`7`5.`K`UXgk`cfh`7`Yb[ U[ Y`@YUfb]b[ ``
- <UfYm`Z`H``f&\$%(`E``H\Y`dgmW`c`c[ micZ`Ub[ i U[ Y.`: fca`XUH`hc`h\Ycfmf( h`YX`E``<cj`Y`Zi`?.  
DgmW`c`c[ mDfYgg``

### F YWca a YbXYX`F Ygci fWg

- ; Ug\_Y`Z`A`"; ``f&\$+\$`+`E``H\Y`C`I`ZcfX`\UbXVcc\_`cZdgmW`c`]b[ i ]ghWg``C`I`ZcfX`Z`I`?.`C`I`ZcfX`I`b]j`Yfg]hm  
DfYgg``
- : i fh\Yf`fYWca a YbXYX`fYgci fWg`UfY`Uj`U]UV`Y`cb`A`ccX`Y``

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

Gh`XYbhZYXVUW\_`]g[ U`h\YfYX`i`g]b[ `I`BGK`fj`a`m9i`dYf]YbW`gmg`hYa`]b`UXX]h]cb`hc`cb![`c]b[ `ZYXVUW\_  
h`fci`[`\ci`h`h\Y`Wci`fgY`UbX`j`]U`]b!`WUgg`UWfj`]h]Yg`UbX`UggYgga`Ybhg``5``Z`fa`g`cZgh`XYbhZYXVUW\_`k`]``VY  
UWYX`i`dcb`hc`]a`dfcj`Y`h\Y`gh`XYbh`YUfb]b[ `Yi`dYf]YbW`]b`h\Y`Wci`fgY`UbX`]hg`Z`h`fY`]hYfU]cbg``



Gi Va ]gg]cb 'cZ5ggYgga YbhiHUg\_g

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

## 5 WUXYa ]W< cbYgmiUbX`D`U[ ]Uf]ga

D`U[ ]Uf]ga `]g`i]g]b[ `hY`k cfXg`cf]XYUg`cZcH`Yfg`UbX`dFYgYb]b[ `hYa `Ug`mci f`ck b`" #WUb`hU`Y`a` Ubm  
Zcfa gZ`Zca `XY`]VYfUH`VX`YU]b[ `hc`UW]XYb]U`m`Wc]dm]b[ `Zca `U`gci fW`k ]h`ci hUW`bck `YX[ Ya`Yb]f`

I BGK ` [ fci dg`d`U[ ]Uf]ga `]bhc`hY`Zc`ck ]b[ `WUH` [ cf]Yg.

7 cdm]b[ .`i]g]b[ `hY`gUa`Y`cf`j`Yfmg]a ]Uf`k cfXg`hc`hY`cf][ ]bU`hY`hcf`]XYU`k ]h`ci hUW`bck `YX[ ]b[ `hY`  
gci fW`cf`i]g]b[ `ei`c]h]cb`a`Uf`g`"H`]g`U`gc`Udd`]Yg`hc`]a`U[ YgZ`Uf]h]UbX`XYg][ b`dfc`YWgZ`Ug`k`Y`Ug`  
dfYgYb]h]cbg`k`YfY`gca`YcbY`dFYgYb]g`Ubch`Yf`g`]XYUg`cf`k`cfXg`k ]h`ci hWYX]f`

#Uddfc]df]UH`d`UfUd`fUg]b[ .`7`U]b[ ]b[ `U`Zk`k`cfXg`UbX`d`fUgYg`k`Y`a`cghm]fY]h]b]b[ `hY`cf][ ]bU`  
gh]f] W`fY`UbX`#`cf`dfc[ fYgg]cb`cZ]XYUg`cZ`hY`cf][ ]bU`Z`UbX`]bZcfa`U]cb`k ]h`ci hUW`bck `YX[ Ya`Yb]f`H`]g`U`gc`  
Udd`]Yg`]b`dfYgYb]h]cbg`k`YfY`gca`YcbY`d`UfUd`fUgYg`Ubch`Yf`g`]XYUg`cf`k`cfXg`k ]h`ci hWYX]h]UbX`hc`  
d]YW]b[ `hc[ Y`h`Yf`ei`c]h]g`UbX`d`UfUd`fUgYg`]bhc`U`bYk`k`c`Yz`k ]h`ci hUddfc]df]UH`fYZYfYbW]b[ "

7 c`i]g]cb.`k`cf\_]b[ `k ]h`c]h`Yfg`Vi`hdUgg]b[ `cZ`h`Y`k`cf`\_`Ug`U`d`Yfgcb`g`]bX]j ]Xi`U`k`cf`\_`7`c`i]g]cb`U`gc`  
]bWi`XYg`dfc]j ]X]b[ `mci`f`k`cf`\_`hc`Ubch`Yf`g]h`XYbhVYZc`fY`hY`Xi`Y`XUH`Zc`f`Zc`f`hY`di`fdcgY`cZ`h`Ya`  
d`U[ ]Uf]g]b[ `Uh`Ubmi]ja`Yz`dUm]b[ `Ubch`Yf`d`Yfgcb`hc`d`YfZcfa`Ub`UWUXYa`]W]Ug`\_`Z`gh]U`]b[ `cf`UW`i`]f]b[  
Ubch`Yf`d`Yfgcb`g`UWUXYa`]Wk`cf`\_`UbX`Wc]dm]b[ ]h`c`Z]f]b[ `hc`W`a`d`Y`h`Ubch`Yf`d`Yfgcb`g`k`cf`\_`cf`gYY\_]b[

- i bXYfghUjX'mci f'f][ \hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wc'dmf][ \hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'UjX'5W'W'dhUV'Y'I gY'cZ  
I BGK '⇒H'F'Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'U'g'U'X'U'f'X'g'c'Z'V'Y'\U'j ]ci f'Y'I d'Y'W'X'c'Z'Y'j Y'f'm'c'b'Y'']b'U'Y'I BGK 'W'c'a'a'i'b]m
- `c'W'U'h'g'Y'f'j ]W'g'U'j'X'j'b'Z'c'f'a U'h'c'b'U'V'c'i h'i BGK 'U'j'X'I BGK '@]V'f'U'f'm

Gca Y'cZ'U'g'Y'U'f'Y'U'g'k ]`VY'Z'Ja ]]U'f'U'c'mci ž'c'h'Y'f'g'k ]`VY'b'Yk " ; U]b]b[ 'U'g'c`X'i bXYfghUjX]b[ 'cZU`'h'Y  
f'Y'U'h'X'U'g'd'Y'W'g'c'Z'9@-G'9'k ]`'Y'd'mci 'a U\_Y'h'Y'a c'g'h'c'Z'mci f'g'h X]Y'g'U'hl BGK ""

[\h'c'.#g'i V'Y'W'i \]X'Y'g"\]V'f'U'f'm'i b'g'k "Y'X'i "U'i #' \]g'Y'#U'V'c'i h'Y' \]g'Y](#)

## 5 WUXYa ]W=Zcfa Uh]cb

: cf`YggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[ `tc.

- fYei Ygth]Zc`f`Yl H`bg]cb/
- `Uh`gi Va ]gg]cbg`[ i ]XY`]bYg/
- fYj ]Yk `cZa Uf\_g/