

## J Z6 'Ghi hh[ Ufh hYghYh'[ Y[ Yb ? U]gYfg`Ui hYfb. 'Gc 'gY\Yb 'G]Y '`]j Y 'ni '

5a '8cbbYfghU[ ž'XYa ') "'GYdhYa VYf'&\$&( ž'k ]fX'XUg'FcVYfh! GW\`]Ybn!GhUX]cb']b'Ghi hh[ Ufh'ni a 'GW\Ui d`Uhn'Y]bYg'gdUbbYbXYb: i » VU``!HYghgd]Y`g'nk ]gW\Yb'XYa 'J Z6'Ghi hh[ Ufh'i bX'XYa '%": 7? U]gYfg`Ui hYfb"'8]YgYg'5i ZY]bUbXYfhfYZZYb'Z]bXYh']a 'F U\a Yb'XYf@\bXYfgd]Y`dUi gY'ghUhh'i bX'gcf[ h'VY]'XYb': Ubg'ZØf'[ fc» Y J cfZfYi XY"'8Yf'J Z6'Ghi hh[ Ufhž'k Y`W\Yf']b'XYf'7\Ua d]cbg'@YU[ i Y gd]Y`hž'k ]fX']b'X]YgYa 'Gd]Y`'[ Y[ Yb'XYb'Nk Y]h`][ ]ghYb'Ui g? U]gYfg`Ui hYfb'UbhfYhYbž'k Ug'XUg'8i Y``'VYgcbXYfg']bhYfYggUbh a UW\h"

9]b 'YfZfYi `]WX Yf '5 gd Y\_h 'ZØf 'X]Y ': i » VU``Ub\àb[ Yf ']gh 'X]Y A Ò[ `]WX\_Y]hž 'X]Y 'DUfh]Y '\_cghYb`cg 'ni 'j YfZc`[ Yb"'G, 8 K 9GH&( '\Uh \dispZcfa Uh]cbYb'[ YgUa a Y`hž k ]Y ': Ubg 'X]Y '6Y[ Y[ bi b[ '`]j Y ']a : YfbgY\Yb'i bX 'ØVYf 'GhfYUa '[ Yb]Y » Yb'\_ObbYb" '8 Ug' \disphYf YggY 'Ub X]YgYa 'HYghgd]Y`]gh 'Ui Z[ fi bX 'XYf 'U\_hi Y``Yb' Gdcfh`U[ Y'[ fc » ž XU X]Y 'VY]XYb' HYUa g'\_i fn 'XUfUi Z'YfbYi h'Ui ZY]bUbXYfhfYZZYb'k YfXYb ']b'XYf 'nk Y]hYb'Fi bXY 'XYg'8: 6!Dc\_U`g'9bXY'C\_hcVYf"

## K ]WX h][ Y 8 Y hU] g ni a HYghgd]Y`

GW.cb 'Yhnh']gh'XUg'FcVYfh!GW.`]Ybn!GhUX]cb 'ni a '6YfghYb'j c``.

J ]Y`Y: Ubg'Ui g'Ghi hh[ Ufh'a ÒW.hYb']\fYb'JYfY]b'i bhYfghØhnYb'i bX
g]W. 'Y]bY'cdh]a U`Y'JcfVYfY]hi b[ 'Ui Z'X]Y'\_ca a YbXYb

<YfUi gZcfXYfi b[ Yb'k ØbgW.Yb"'8Yf'JZ6'Ghi hh[ Ufh'k ]fX'U`g
6i bXYg`][ U!JYfY]b'Yfk UfhYhž'k À\fYbX'?U]gYfg`Ui hYfbž'Y]b

 $\label{eq:local_state} $$ hfUX]h]cbY``Yf'?`iVž'jYfgiWhž'nifØW_']b`X]Y`YfghY`@][U'ni[Y`Ub[Yb"]$ 

8]YgYf'HYgh'X]Ybh'b]Wh'bif'XYf'A UbbgW\UZhgV]`Xi b[ žgcbXYfb Ui W\ XUni ž'X]Y': cfa 'i bX': ]hbYgg'XYf'Gd]Y`Yf'ni 'hYghYb"'8]Y'NY]h XYf'@\bXYfgd]Y`Y'k]fX'cZh'[Ybi hnhž'i a '[Y[Yb'UbXYfY A UbbgW\UZhYb'ni 'gd]Y`Ybž'X]Y'b]W\h'Ua ']bhYfbUh]cbU`Yb Gdcfh[YgW\Y\Yb'hY]`bY\a Ybž'k Ug']XYU`Y'6YX]b[i b[Yb'ZØf a ]bXYghYbg'Y]bYb'HY]`'XYg'? UXYfg'gW\UZZhž'i a ']bhYbg]j 'ni hfU]b]YfYb"': Øf': Ubg']gh'X]Yg'b]W\h'bif'Y]bY'A Ò[`]W\\_Y]hž']\fY @]YV`]b[ggd]Y`Yf'Ui Z'XYa 'D`Uhn'ni 'gY\Ybž'gcbXYfb'Ui W\ Y]b 5b`Uggž'X]Y'9bhk]W\_`i b[']\fYf'A UbbgW\UZh'ni 'VYcVUW\hYb"

8 UgʻGd]Y`k]fXʻj cbʻj YfgWk]YXYbYbʻA YX]YbʻØVYfhfU[Ybž'X]YʻYgʻXYb Ni gWkUi YfbʻYfa Ò[`]WkYbžʻX]Yʻ5\_h]cbʻVYei Yaʻj cbʻniʻ< Ui gYʻUi g ni ʻj YfZc`[Yb"'8]Yʻ@jj Y!¸ VYfhfU[i b[YbʻV]YhYbʻUi » YfXYaʻY]bY 5 bU`mgYʻXYfʻYfghYbʻ< À`ZhYžʻk À\fYbXʻ]bʻXYbʻDUi gYbʻGhUh]gh]\_Yb j YfÒZZYbh`]Wkhi bXʻk]Wkh][Yʻ: U\_hYbʻni fʻJ YfZØ[i b[ʻ[YghY``h k YfXYb"'Gc`WkYʻ6Yf]WkhYfghUhhi b[Yb`\UVYbʻ]bʻXYfʻ\Yi h][Yb : i » VU``\_i `hi fʻY]bYbʻ\c\YbʻGhY``Ybk Yfhi bXʻa UWkYbʻXUg Ni gWkUi YfYf`YVb]gʻbcWkʻgdUbbYbXYf"

Ni gàhn`]W\ni `XYb`Gd]Y`ghUh]gh]\_Yb`]ghY]b`k Y]hYfYf`\_fYUh]j Yf 5bgUhn`XYf`J Yfk YbXi b[ 'j cb`gcn]U`Yb`A YX]Ybž'i a `X]Y`: Ubg Y]bni VYn]Y\Yb"`8 Ug`ghY][ YbXY`9b[ U[ Ya Ybh`Ui Z'D`UhhZcfa Yb`k ]Y Hk ]hhYf`i bX`=bghU[ fUa `nY][ hž'k ]Y`k ]W\h][ `Yg`ZØf`X]Y`5b\àb[ Yf`]ghž ]b`9W\hnY]h`a ]h`]\fYb`HYUa g`j YfVi bXYb`ni `gY]b"`A ]h`@j Y!I dXUhYg \_ObbYb`X]Y`: Ubg`X]Y`Gh]a a i b[ `fi bX`i a `XUg`Gd]Y``a ]hYf`YVYbž Ui W\k Ybb`g]Y`b]W\h`]a `GhUX]cb`g]bX"

A ]h'XYf'VYj cfghY\YbXYb'8: 6!Dc\_U`fi bXY'nk ]gW\Yb'XYa 'J Z6 Ghi hh[ Ufh'i bX'XYa '%": 7'? U]gYfg`Ui hYfb'k ]fX'XUg 5i ZY]bUbXYfhfYZZYb']a 'HYghgd]Y`'Ui W\'U`g'J cfVYfY]hi b[ 'ZØf'X]YgYg YbhgW\Y]XYbXY'Gd]Y`'[ Ybi hnh"'6Y]XY'A UbbgW\UZhYb'k YfXYb'a ]h Y]bYf'A ]gW\i b[ 'Ui g'Cdh]a ]ga i g'i bX'9\f[ Y]n'UbhfYhYbž'k Ug'XYb 5i g[ Ub[ 'X]YgYg'VYj cfghY\YbXYb'Gd]Y`g'i a gc'i b[ Yk ]ggYf'a UW\h"

 $8 ] Y`J cfZfYi XY`Ui Z`XUg`HYghgd] Y``]gh`gd \varnothing fVUfž`i bX`k À \fYbX`X] Y \\$ 

VY]XYb 'HYUa g'Ui Z'XYa 'Gd]Y 'ZY 'X ']\ fY '? fÀZhY 'a YggYbž'\cZZYb 'X]Y : Ubg'Ui Z'Y]b 'gdUbbYbXYg'i bX ']bhYbg]j Yg'Gd]Y 'ž'XUg'X]Y 'E i U`]hÀh VY]XYf'A UbbgW\UZhYb 'nY][ h" Ni [ 'Y]W\ 'V]YhYh'Yg'X]Y 'A Ò[ `]W\\_Y]hž J Yf`Yhni b[ Yb 'ni 'j Yfa Y]XYb'i bX 'GhfUhY[ ]Yb 'ni 'hYghYbž'X]Y ']b 'XYb \_ca a YbXYb'K YhhVYk YfVYb'j cb '6YXYi hi b[ 'gY]b'\_ObbhYb" '9]b gc `W\Yf'HYgh']gh'YbhgW\Y]XYbX'ZØf'X]Y 'Cdh]a ]Yfi b[ 'XYg HYUa gd]Y`g'i bX 'XUg'GW\ÀfZYb'XYf']bX]j ]Xi Y``Yb': À\][ \_Y]hYbž'X]Y Ui W\ ']b 'XYb 'ni \_ØbZh][ Yb'DZ]W\hgd]Y`Yb'[ YZfU[ h'gY]b'k YfXYb"

8 Y hU]`q

6Ygi WXYb G]Y i bg Ui Z b!U[ "XY