

Fj Zhi ʔc°9`W, Z&%Y%

6hhZhbb Zci	I Zhi	9db Vʔ	H` ʔa	9^ Xj ʔn
H6l	GZWʔc\`VcY`L gʔʔc\`	: nēgZhʔcʔd[°>ZVh	G] ZidgXVa Hnci] Zhʔh	

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2.2

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6[bWX`4`Vf`g[X`UXfgTafj Xd`G[Vf`V[bWX`~ bfgXYXVgi X_`ceXfXagf`g[XfghW TaWgf`EaWwZf!`gbcXaf`j`Vd`g[XfghW TaWaT`Xf`Vg`_XTWexfXTev[Xēžg[Xa`gk`_f`hf`Vg`EaWwZ`-g[Tgg[Xi`WkagEXW*`BeV[WTVXTX`fcXVXf`a`g[X`gk`cXeTgk YbeXfg`bYBTkTVTŽ@Xk`Wb!Ñ

6[bWX`5`Vf`aVbeeXVg`G[Vf`V[bWX`WbXfa`g`aV_hVW`g[XfghW f`EaWwZfŽfb`gYT`f`g[TV[Wi`X`g[XZbT`_!`gWbXfa`g`Xagba`g[Tgg[XeX`j`Tf`TfghW`TgT`_!`Ñ[bWX`6`Vf`aVbeeXVg`G[Vf`V[bWX`WbXfa`g`ceXfXag`g[XfghW Žfb`gYT`f`g[TV[Wi`X`g[XZbT`_!`gWbXfa`g`Xagba`g[Tgg[XeX`j`Tf`TfghW`TgT`_!`Ñ[bWX`7`Vf`aVbeeXVg`G[Vf`V[bWX`WbXfa`g`aV_hVW`g[XfghW f`EaWwZfŽfb`gYT`f`g[TV[Wi`X`g[XZbT`_!

DhXfgba`7`VĖVh_g`-@XVWh`

Fj Zhi ʔdc°9°-) Z&% X[

6hhZhnb Zci	I Zhi	9db Vʔc	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gfʔc\	: nēgZhʔdcʔd[ʔ°XZVh	G] ZidgXVa Hnci] Zhʔh	

I

2.3

I , II

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II

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6[bWXˊ7 ʔf ʔg XʔUXfgTafj XeˊG[XʔfXagXaVXʔXkc_ʔʔaf Ta TW TagʔZXʔbYGTaZ TaW[ʔf ʔb_XTZhXfʔc_ʔgahˊ ʔVTgʔ_ʔ fgʔ abgaZ_ʔg ʔgʔgeXdhʔeXf YTeˊ_Xffʔc_ʔgahˊ ʔfj [W[ʔf eTeXTaWXkcXafʔi Xfʔgʔ Ta ʔbʔ Xeˊc_ʔgahˊ ʔVTgʔ_ʔ fgʔ Wb!

6[bWXˊ4 ʔf ʔaVbeeXVgʔG[XʔfXagXaVXʔXkfVeUXf ʔgʔ Xʔc_ʔgahˊ ʔVTgʔ_ʔ fgʔg ʔgGTaZ TaW[ʔf ʔb_XTZhXf ʔVeXTgXWʔgWbXfa ʔg Xkc_ʔʔa Ta TW TagʔZXʔbYgʔ Xeˊc_ʔgahˊ ʔVTgʔ_ʔ fgʔ6[bWXˊ5 ʔf ʔaVbeeXVgʔG[XʔfXagXaVXˊXˊ c[TfʔnXf Tʔfˊ ʔTeʔg UXg XXa ʔgʔ XʔaXj ʔc_ʔgahˊ ʔVTgʔ_ʔ fgTaWbʔg Xeˊc_ʔgahˊ ʔVTgʔ_ʔ fgʔ. ʔgWbXfa ʔgXkc_ʔʔa Ta TW TagʔZXʔbYgʔ XʔaXj c_ʔgahˊ ʔVTgʔ_ʔ fgʔ6[bWXˊ6 ʔf ʔaVbeeXVgʔG[XʔfXagXaVXʔVbaaXVgʔ ʔgʔ Xˊˊ Xgʔ_ʔc_ʔgahˊ ʔgb ʔgʔ XʔhaVgbaʔaZʔbYc_ʔgahˊ ʔVTgʔ_ʔ fgʔŽabgaZ_ʔg ʔg_ʔeZX Tˊ ʔbhaʔgʔ ʔbYc_ʔgahˊ ʔTeXˊg cWT_ʔ ʔexdhʔeXWʔbec_ʔgahˊ ʔVTgʔ_ʔ fgʔ gb UXˊXWˊXVgi X. ʔg WbXfa ʔgXkc_ʔʔa Ta TW TagʔZXʔbYGTaZ TaW[ʔf ʔb_XTZhXfʔc_ʔgahˊ ʔVTgʔ_ʔ fgʔ

DhXfgbaˊ7\\EˊVh_g -@XWˊhˊ

Fj Zhi^dc°9°+'). V& (

6hhZhbb Zci	I Zhi	9db V^c	H^ ^aa	9^ Xj an
H6l	GZW^c\ ^cY^L gf^c\	: negzhh^dc^d[^°>ZVh	G] ZidgXVa Hnci] Zh^h	

I

2.5

I , II

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II

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6[b\WX^4 ^f`g[X^UXfgTafj Xe^G[^f`V[b\WX^ceXfXagf`g[X^fghW f`eXfh_gf`Yeb` `g[X^_Tfgg[bUh_Xgcb^agf!

6[b\WX^5 ^f`^aVbeeXVg`G[^f`V[b\WX^WXfVeUXf`g[X^UTV^ZebhaWTaW` bgi Tgba`bYg[X^fghW`Uhgabgg[X^bhgVb` X^be
EaVWaZf! 6[b\WX^6 ^f`^aVbeeXVg`G[^f`V[b\WX^WXfVeUXf`g[X^eXfXTeV[^dhXfggba`be[I cbg[Xf^f`bYg[X^fghW`Uhgabgg[X
Xi ^WkaVX`be^VbaV_hf^ba! 6[b\WX^7 ^f`^aVbeeXVg`G[^f`V[b\WX^WXfVeUXf`g[X`` Xg[bWbeWXf^Za`bYg[X^fghW`Uhgabgg[X
TVghT_eXfh_gf!

DhXfgba`7^E^Vh_g`-@XVWh`

Fj Zhi ʔdc°9ʔYY&&Z* VW

6hhZhbb Zci	I Zhi	9db Vʔc	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gʔʔc\	: nēgʔhhʔdc°d[ʔ>ZVh	G] ZidgXVa Hnci] Zhʔh	

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2.6

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6[b\WXˊ4 ʔf ʔg[XʔUXfgTafj Xeˊ ʔg\WkfVeUXf ʔGTeUX_ʔf ʔai XfgZTgba TaWg[Xˊ_XaZg[f ʔf[Xj Xaggb ʔbˊ c_Xgk ʔg

6[b\WXˊ5 ʔf ʔaVbeeXVgˊG[ʔf ʔV[b\WX\WbXfa ʔg\WkfVeUX[bj ʔg[bebhZ[ʔGTeUX_] Tf! ʔafgXTWZ ʔgZ\ Xf TʔUbbZeTc[\WT_ʔf^XgV[!

6[b\WXˊ6 ʔf ʔaVbeeXVgˊG[ʔf ʔV[b\WX\WbXfa ʔg\WkfVeUX[bj ʔg[bebhZ[ʔGTeUX_] Tf! GTeUX_WWb ʔgba_ ʔbaVhVg ʔagXe ʔXj f

¶¶f[XT_fbˊ ʔkTˊ ʔaXWg[bhfTaWf ʔbYcTZXf ʔbYg[X ʔbˊ cTaI ʔf ʔagXeaT_ ʔbˊ ʔ ha\WTgbaf!¶6[b\WXˊ7 ʔf ʔaVbeeXVgˊG[ʔf

V[b\WX\WbXfa ʔg\WkfVeUX[bj ʔg[bebhZ[ʔGTeUX_] Tf! ʔg\WkfVeUXf [XeUbb^ ʔhg\WbXfa ʔg ʔaV_hVWkTaI g[ʔaZ TUbhg[Xe

ʔai XfgZTgba!

DhXfgba ʔ7\ŸVh_g -@XVWhˊ

Fj Zhi ʔdc°9°&W) V- %ʌ

6hhZhnb Zci	I Zhi	9db Vʔ	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gʔʔc\	: nēgʔhhʔdcʔd[ʔ>ʔZVh	G] ZidgʔXʔa Hnci] Zhʔh	

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6[b\Xˊ6 ʔf ɔ̃ X\UXfgTafj XeˊG[ʔf V[b\Xˊˊ bfgX\XVgi X_ ʔXˊ c[Tf\mXfˊ[bj ʔEbˊ aXI j bb_\V\X\ef ʔEbˊ ʔ@XeʔabTaW ETˊ Ubh_Xgj bb_!ˊg\W\XfVe\UXf ɔ̃ X\W\X\XeXaVXˊa ɔ̃ W^aXff TaWg[X\W\X\XeXaVXˊa j [Tgɔ̃ XI ʔeXhfXW\beŋ

6[b\Xˊ4 ʔf ʔaVbēēXVgˊG[ʔf V[b\X\W\XfaˊgXˊ c[Tf\mXˊ[bj ʔEbˊ aXI j bb_\V\X\ef ʔEbˊ ʔ@XeʔabTaW ETˊ Ubh_Xgj bb_!ˊg\W\Xfaˊgˊ Xagɓa ʔ@XeʔabˊbeETˊ Ubh_Xgj bb_TgT_!ŋ[b\Xˊ5 ʔf ʔaVbēēXVgˊG[ʔf V[b\X\W\XfaˊgXˊ c[Tf\mXˊ[bj Ebˊ aXI j bb_\V\X\ef ʔEbˊ ʔ@XeʔabTaW ETˊ Ubh_Xgj bb_!ˊg\W\Xfaˊgˊ Xagɓa ʔ@XeʔabˊbeETˊ Ubh_Xgj bb_TgT_!ŋ[b\Xˊ7 ʔf ʔaVbēēXVgˊG[ʔf V[b\X\W\XfaˊgXˊ c[Tf\mXˊ[bj ʔEbˊ aXI j bb_\V\X\ef ʔEbˊ ʔ@XeʔabTaW ETˊ Ubh_Xgj bb_!ˊg\W\Xfaˊgˊ Xagɓa ʔEbˊ aXI ž@XeʔabˊbeETˊ Ubh_Xgj bb_TgT_!ŋ

DhXfgɓa ʔ7\ŲēVh_g ʔ-@XW\hˊ

Fj Zhi ʔdc°9* +XW)) V

6hhZhnb Zci	I Zhi	9db Vʔ	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gʔʔc\	: neġzhʔdc°d[ʔ>ZVh	G] ZidgXVa Hnci] Zhʔh	

I

2.11

I , II

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ETgbaT_X

6[b\WX'7 ʔf'g X'UXfgTafj Xd'G[X'fXagXaVX'X' c[Tf\mXf T'W\WXeXaVX'UXg XXa f'heTVXžVŷ X_ʔaZ TaWWTi XžVŷ X_ʔaZ gXgeTf ŽabgaZ'g Tgj [\X'f'heTVXžVŷ X_ʔaZ'gXgeTf VTa fXXŽVTi XžVŷ X_ʔaZ'gXgeTf VTa'g

6[b\WX'4 ʔf ʔaVbeeXVg'J [\X'g X'fXagXaVX'abgXf'g Tgf'heTVXžVŷ X_ʔaZ TaWWTi XžVŷ X_ʔaZ'gXgeTf TeX'W\WXeXagŽg WbXfa'gX' c[Tf\mX'Tal W\WXeXaVX'UXg XXa'g X'g b'cbch_Tgbaf bYgXgeTf!'6[b\WX'5 ʔf ʔaVbeeXVg'UXVThfX'g X'fXagXaVX Xkc_Tʔaf'g TgVTi XžVŷ X_ʔaZ'gXgeTf hfX'fXafbel eXVXcgbef ba'g X'ef^h_f'gb'aTi VZTgX.'gWbXfa'gX' c[Tf\mXT W\WXeXaVX'UXg XXa f'heTVXžVŷ X_ʔaZ TaWWTi XžVŷ X_ʔaZ'gXgeTf!'6[b\WX'6 ʔf ʔaVbeeXVg'J [\X'g X'fXagXaVX'abgXf'g Tg g'XeXTeX'g b'W\WXeXagcbch_Tgbaf bY@XkV'Ta'gXgeTf ŽgWbXfa'gX' c[Tf\mX'Tal W\WXeXaVX'UXg XXa'g X'g b'cbch_Tgbaf!

DhXfgba ʔ7\ŲVh_g -'@XWWh`

Fj Zhi ^dc°9° - &(&*% (

6hhZhnb Zci	I Zhi	9db Vc	H ^aa	9^ Xj an
H6l	GZY'c\ VcY'L gf'c\	: negZh'h'dc'd[°>ZVh	G] ZidgXVa Hnci] Zh'h	

[illegible]

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6[b\X'6'f'g' X'UXfgTafj Xe'G[f'f'g' X'ba_ 'V[b\X'g' Tg' T^Xf TZXaXeT_mTgba TUbhgh_geT TeTg baf!

6[bWX'4'f'f'VbeeXVg'G[f'V[bWX'Z'f'f'cXVh'V'XkT' c_Xf' bYh_gT' TeTg' baf'UhgWbXfa'gfTI' Tal'g' f'Z' TUbhgd' X' Tf' T'VTgXZbel'!6[bWX'5'f'f'VbeeXVg'G[f'V[bWX'Vb' cTeX' TeTg' baf'f'Z'XaXeT_g'baf'f'cXVh'V'gT' TeTg' baf'UhgWbXfa'gfTI' Tal'g' f'Z' TUbhgh_gT' TeTg' baf'f'f'VTgXZbel'!6[bWX'7'f'f'VbeeXVg'G[f'V[bWX'VbagTf'g'g' b'f'cXVh'V'gT' TeTg' baf'UhgWbXfa'gfTI' Tal'g' f'Z' TUbhgd' X' Tf' T'VTgXZbel'!

DhXfgba'7\YëVh_g-@XVh`

Fj Zhi ʔdc°9̎) . [Z(%+W

6hhZhbb Zci	I Zhi	9db Vʔc	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gfʔc\	: nēgZhʔdcʔd[°>ZVh	G] ZidgXVa Hnci] Zhʔh	

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2.13

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6[b\WX'4 ʔf'g[X'UXfgTafj Xe'G[X'fXagXaVX'Xkc_Tʔaf'g[X'beZ'a bYg[X'CXefXW' XgXbef[bj Xef'aT` X-g[X VbafgX_Tgba'CXefXhfŽj [XeX'g[X` XgXbef[bj Xef'eTWTagʔf' bVTgXW

6[b\WX'5 ʔf ʔaVbeeXVg'G[X'fXagXaVX` T^Xf T'V_T\` TUbhg` XgXbef[bj Xe'aT` Xf ʔa'ZXaXeT_`gVbXfa'gXkc_Tʔa'g[X beZ'a bYg[X'CXefXW' XgXbef[bj Xef'aT` X'fcXVĖVT_!6[b\WX'6 ʔf ʔaVbeeXVg'G[X'fXagXaVX'ʔaVWVTgXf j [Xa TaW j [XeX'g[X'CXefXW' XgXbef[bj Xeʔf i ʔf\U_X. gVbXfa'gXkc_Tʔa'g[X'beZ'a bYg[X` XgXbef[bj Xef'aT` X!'6[b\WX'7 ʔf ʔaVbeeXVg'G[X'fXagXaVX'VWfVhffXf` XgXbef[bj Xef ʔa'ZXaXeT_`gVbXfa'gXkc_Tʔa'g[X'beZ'a bYg[X'CXefXW' XgXbef[bj Xef'aT` X!

DhXfgba'7\ĖVh_g -@XWWh`

6hhZhnb Zci	I Zhi	9db Vc	H ^aa	9^ Xj an
H6l	GZY'c\ VcY'L gf'c\	: negZh'h'dc'd[°>ZVh	G] ZidgXVa Hnci] Zh'h	

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6[b\WX'5'f'f'aVbeeXVgJ [\X'g' X'fXagXaVX'Xkc_T'af'g' Tg[f'gpeTaf' UX_Xi X'4UX_X'Wkf'ZaXW' bfgbY7h^X'f'VT' chf' Uh_W'aZf'Z'g'WbXfa'g'fcXV\j [I [f'gpeTaf' [b_Wg' TgUX_XY!'6[b\WX'6'f'f'aVbeeXVgUXVThfX'g' X'fXagXaVX'X' c[Tf'vX'g' X'TeV[g'XVgheT'f'g' _X'f' bY7h^X'f'VT' chf' Uh_W'aZf' .g'WbXfa'g'fcXV\j [I [f'gpeTaf' UX_Xi X'4UX_X'Wkf'ZaXW'g' X Uh_W'aZf!'6[b\WX'7'f'f'aVbeeXVgJ [\X'g' X'fXagXaVX'Xkc_T'af'g' Tg4UX_X'f' UX_Xi XWgb[Ti X'Wkf'ZaXW' bfgbYg' X Uh_W'aZf' ba'7h^X'f'VT' chf'Z'g'WbXfa'g'fcXV\j [I [f'gpeTaf' UX_Xi X'g' Tg[X'Wkf'ZaXW'g' X'Uh_W'aZf'!

DhXfgba'7\ËVh_g-@XVWh`

Fj Zhi ʔdc°9°() Z&&') [

6hhZhbb Zci	I Zhi	9db Vʔ	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gfʔc\	: nēgʔhhʔdcʔd[ʔ>ʔZVh	G] ZidgXVa Hnci] Zhʔh	

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6[bWXˈ5ʔfˈg XUXfgTafj XeˈG[XʔfXagXaVXˈcebi WXf TaˈXkc_JaTgɓa TaWTaˈXkTˈ c_XʔbY4Xb_ʔTa_ʔJaWɓeˈ fŽXkc_ʔʔaʔaZ
gˈTggˈ Xi TeX_ʔJaWɓeˈ f VeXTgXWUI j ʔaWTaWbYXeaZˈgˈ Xˈ hf[ebbˈ ʔebV^ʔf TaˈXkTˈ c_X!

6[bWXˈ4ʔf ʔaVbeeXVgˈG[XʔfXagXaVXˈXkc_ʔJaʔfˈgˈ Tg4Xb_ʔTa_ʔJaWɓeˈ f TeXVeXTgXWUI j ʔaWUhgWbXf ʔabgcebi WX Ta
XkTˈ c_XʔbYTaI ʔcXVʔVˈ4Xb_ʔTa_ʔJaWɓeˈ f!ETgˈ XeŽgˈ XˈXkTˈ c_Xˈgcebi WXf ʔf bYTˈj ʔaWʔUTfXWcebVXff!6[bWXˈ6ʔf
ʔaVbeeXVgˈJ [\Xˈgˈ XʔfXagXaVXˈcebi WXf TˈcTegTˈXkc_JaTgɓa ʔbY4Xb_ʔTa_ʔJaWɓeˈ fŽabgaZˈgˈTggˈ Xi TeXVeXTgXWUI
gˈXj ʔaWŽgWbXf ʔabgXYXVgi X_ʔcebi WX TaˈXkTˈ c_X!G[XʔfXagXaVXˈfXXˈ fˈgɓ ʔaWWTgXˈgˈTgˈ hf[ebbˈ ʔebV^ʔfŽeTgˈXe
gˈTa UXʔaZ TaˈXkTˈ c_XʔbY4Xb_ʔTa_ʔJaWɓeˈ fŽTeXWfˈgaVgYebˈ ˈgˈXˈ!6[bWXˈ7ʔf ʔaVbeeXVgˈJ [\Xˈgˈ XʔfXagXaVX
cebi WXf TaˈXkc_JaTgɓa ʔbYTˈ hf[ebbˈ ʔebV^Žj [W[ʔf Tˈf cXVʔVˈXkTˈ c_XʔbYTaˈ4Xb_ʔTa_ʔJaWɓeˈ ŽgWbXfaˈgcebi WX
TaˈXkc_JaTgɓa ʔbY4Xb_ʔTa_ʔJaWɓeˈ f ʔaˈZXaXeTˈ!

DhXfgbaˈ7VʔVh_g -@XWWhˈ

Fj Zhi ʔc°9°&) +. Y' (V

6hhZhbb Zci	I Zhi	9db Vʔ	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gʔʔc\	: nēgZhʔcʔd[ʔ°>ZVh	G] ZidgXVa Hnci] Zhʔh	

I

2.18

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6bēeXVg4afj Xe-5

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6[b\WX'5'ʔf'g' XUXfgTafj Xd'G[ʔf V[b\WX'WkfVeUXf'4WāTaʔ'7XVX' UXe'Yēb' @/ J ʔaWb'j ʔa'Tj TI'g' TgTffh' Xf'g' X ThWXA VX'ʔf T_eXTW YT' \Tej' g' ʔxcbeX_bf TaWbVhfXf'ba'g' XfcXVĖV'XTgheXf'bYg' Xj be^ʔ'g' ʔbagXagTaW ʔ XWWh' !

6[b\WX'4'ʔf'ʔaVbēeXVg'G[ʔf V[b\WX'ʔfa'gʔfh'gXWbeTa ThWXA VX'T_eXTW YT' \Tej' g' ʔxcbeX_bf!'4 YT' \TeThWXA VX j bh_ʔa'gaXXWg'p[Ti X'g' X'gXe' WĖEaXWbe'Xkc_T'ʔaXW'6[b\WX'6'ʔf'ʔaVbēeXVg'G[ʔf V[b\WX'WbXfa'gWkfVeUX'4WāTaʔ' 7XVX' UXe'Yēb' @/ J ʔaWb'j !<g' Xagbaf'g' Xl XTeTaWg' X'g cX'bYj be^ Uhgabg'g' X'ʔbagXagbe'g' X' XWWh' !<a TWWgbaŽ'gcebi Wkf T'f' c_X'WĖEa'g'ba'bY'ʔxcbeX_bfŽ' T^ʔaZ'g' ʔf Ta'ʔaTccebceTg'X'V[b\WX'ʔbeTa ThWXA VX'T_eXTW YT' \Tej' g' ʔxcbeX_bf!'6[b\WX'7'ʔf'ʔaVbēeXVg'G[ʔf V[b\WX'ʔfa'gʔfh'gXWbeTa ThWXA VX'T_eXTW YT' \Tej' g' ʔxcbeX_bf!'4 YT' \TeThWXA VX j bh_ʔa'gaXXWg'p[Ti X'g' X'gXe' WĖEaXW

DhXfgba'7\ĖVh_g' -@XWWh'

Fj Zhi ʔc°9°(ZV, (, ' Z

6hhZhbb Zci	I Zhi	9db Vʔ	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gʔʔc\	: nēgZhʔcʔd[ʔ°>ZVh	G] ZidgXVa Hnci] Zhʔh	

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6[bWX°5 ʔf ʔg XʔUXfgTafj Xe°G[XʔfXagXaVX°XWXVgi X_ X° c[TfʔnXf T WXXeXaVXʔUXg XXa ʔg X°@Xk°6T_°5XaaʔT_TaW
geTWgbaT_UXaaʔT_f Žf gTgaZ ʔg Tg ʔg X°@Xk°6T_°5XaaʔT_ʔf ha_ʔ°X°geTWgbaT_UXaaʔT_f UXVThfX°g[bf ʔf Xk[ʔggbaf
ʔa WXXeXagi XahXf ʔba Ta haXi Xa ʔfV[XWʔh_X!

6[bWX°4 ʔf ʔaVbeeXVg°G[XʔfXagXaVX°ʔaWWTgxf j [bʔbhaWkWg X°@Xk°6T_°5XaaʔT_TaWg X! XTef ʔg ʔf UXaaʔT_ Tf
gʔ^Xa ʔc_TVX. ʔgWbXfa ʔgX° c[TfʔnXf T WXXeXaVXʔUXg XXa ʔg X°@Xk°6T_°5XaaʔT_TaWgeTWgbaT_UXaaʔT_f!°6[bWX°6 ʔf
ʔaVbeeXVg°J [ʔ_X ʔg XʔfXagXaVX°V_ʔeĖXf ʔg X°geTWgbaT_ XTaʔaZ bYUXaaʔT_j ʔg ʔJaZhTZX ʔg TgVbh_WTcc_ ʔg ʔg X
@Xk°6T_°5XaaʔT_ŽgWbXfa ʔg Xagba ʔg X°@Xk°6T_°5XaaʔT_UI ʔaT° X! G[XeXbeXŽg XʔfXagXaVX°WbXfa ʔgXWXVgi X_ X
X° c[TfʔnXf T WXXeXaVXʔUXg XXa ʔg X°@Xk°6T_°5XaaʔT_TaWgeTWgbaT_UXaaʔT_f!°6[bWX°7 ʔf ʔaVbeeXVg°G[XʔfXagXaVX
abgxf ʔbVTgbaf j [XeXi Tebhf UXaaʔT_Xk[ʔggbaf [Ti X°UXXa [X_W ʔgWbXfa ʔgX° c[TfʔnXf T WXXeXaVXʔUXg XXa ʔg X
@Xk°6T_°5XaaʔT_TaWgeTWgbaT_UXaaʔT_f!

DhXfgba °7\ĖVh_g -°@XWʔh°

Fj Zhi ʔdc°9Z[X& &* (

6hhZhhb Zci	I Zhi	9db Vʔc	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ VcYʔL gʔʔc\	: nēgZhhʔdc°d[ʔ>ZVh	G] ZidgXVa Hnci] Zhʔh	

I	2.22
I	II
• I , I , I	
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• II , I , I	I
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I I	I I I
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II	I
I I	I , I II
II	I I ,

I

6beeXVg4afj Xe-7

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6[bWX'7'ʔf'g' XUXfgTafj Xd'G[X'fXagXaVX~ T^Xf TaWfhccbeg' TZXaXeT_nTgba Tubhgd' X'XYXVgbYeXWkf\Za'aZ T'Vg' ʔ TZʔabgaZ'gd' TgeXWkf\Za'aZ T'Vg' ʔ TZ VTa VeXTgk'T~ XTa'aZYh_fI` Ub_bYWi W'ceWkZTf'j Tf'gd' X'VTfX j [Xa'gd' X'Vg' bYCbVTgk_b'eXWkf\ZaXWgf' ʔ TZ!

6[bWX'4'ʔf'aVbeeXVgUXVThfX'gd' X'fXagXaVX'Xkc_T'af'gd' Tg` Tai HF VgXf [Ti X'eXWkf\ZaXWgd' Xeʔ TZf TaW cebi Wkf Ta XkT` c_X.'gWbXfa'g` T^XTaWfhccbegT ZxaXeT_nTgba Tubhgd' X'XYXVgbYeXWkf\Za'aZ T'Vg' ʔ TZ!

6[bWX'5'ʔf'aVbeeXVgUXVThfX'gd' X'fXagXaVX'cebi Wkf Ta XkT` c_X'bYT'Vg' gd' TgeXWkf\ZaXWgf' ʔ TZ.'gWbXfa'g` T^XTaWfhccbegT ZxaXeT_nTgba Tubhgd' X'XYXVgbYeXWkf\Za'aZ T'Vg' ʔ TZ!

6[bWX'6'ʔf'aVbeeXVgUXVThfX'gd' X'fXagXaVX'X` c[Tf'vXf'j [I'gd' X'ʔ TZ'bYCbVTgk_b'j Tf'eXWkf\ZaXW'gWbXfa'g` T^XTaWfhccbegT ZxaXeT_nTgba Tubhgd' X'XYXVgbYeXWkf\Za'aZ T'Vg' ʔ TZ!

DhXfgba'7\ŒVh_g`-@XWWh`

Fj Zhi ʔdc°9°- (* V&%&W

6hhZhnb Zci	I Zhi	9db Vʔc	Hʔ ʔaa	9^ Xj ʔn
H6l	GZWʔc\ VcYʔL gʔʔc\	: nēgZhʔdc°d[ʔ>ZVh	G] ZidgXVa Hnci] Zhʔh	

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6[b\WX'7'ʔ'g[X'UXfgTafj Xēd'G[X'fXagXaVX'VbageTfg'@'ʔaaXfbgT'f WXĒa'gba'bYT'J^X'j \g[J' ʔfVbaf'ʔa'fŽ
Xkc_J'ʔa'ʔa'Z'g[Tg@'ʔaaXfbgT'f WXĒa'gba'fj [W['gT^X'f'ʔnX'ʔa'gb TVbhag'fV' beX'eXfgeWgi X'g[Ta J' ʔfVbaf'ʔa'f
WXĒa'gba'fj [W['WbXfa'g
6[b\WX'4'ʔ'ʔa'VbeeXVg'J [\X'g[X'fXagXaVX'abgX'f'g[TgJ' ʔfVbaf'ʔa'f WXĒa'gba'bYT'J^X'WbXfa'g'gT^X'f'ʔnX'ʔa'gb
TVbhag'g'WbXfa'g'VbageTfg@'ʔaaXfbgT'f WXĒa'gba'j \g[J' ʔfVbaf'ʔa'f! 6[b\WX'5'ʔ'ʔa'VbeeXVg'G[X'fXagXaVX'fgT'gXf
g[TgJ' ʔfVbaf'ʔa'f WXĒa'gba'bYT'J^X'ʔ'WXXeXag'Yeb' @'ʔaaXfbgT'f ŽUhg'g'WbXfa'g'V_TeV [bj' g[Xl' WXXe'ʔa'bg' Xe
j beW'Ž'g'WbXfa'g'VbageTfg@'ʔaaXfbgT'f WXĒa'gba'j \g[J' ʔfVbaf'ʔa'f! 6[b\WX'6'ʔ'ʔa'VbeeXVg'G[X'fXagXaVX
ʔa'VWTgX'f [bj' ʔ' Tal' J^X'f'J' ʔfVbaf'ʔa'f [Tf TVbēWʔa'Z'gb@'ʔaaXfbgT'f WXĒa'gba'bYT'J^X'ŽUhg'g'WbXfa'g'V_TeV
[bj' g[X'fgT'gX'f WXĒa'gba'f WXXe'ʔa'bg' Xe j beW'Ž'g'WbXfa'g'VbageTfg@'ʔaaXfbgT'f WXĒa'gba'j \g[J' ʔfVbaf'ʔa'f!
DhXfgba'7'VĒVh_g' -@XWWh'

Fj Zhi[^]dc°9°, [V V&ZZ

6hhZhnb Zci	I Zhi	9db V^c	H ^aa	9^ Xj an
H6l	GZY^c\ VcY^L g^c\	: neZh^dc^d[^ZYVh	G] ZidgXVa Hnci] Zh^h	

9/1, [V W&ZZ

L] ʒ ʒhZVgX] ʿ ʿ VīdeʿXīVʰij YZci] VhīV Zcī] Z[dadl ʿ ʿ cdiZh/
 ɛ b ZiZdgdaʿn!VcVʒb VhhʰVʿa/gZWYnd[Vʒi ʰ] ʼZcZgʿan] cʿ[db] j b ʿʰnVcYīZb eZgMij ʒ#
 6ʒb VhhZhVʒʿXdb b dcaʿXa/hh^ ZYVhīl dʿʒiizgʿVb Zh#
 I] Zʰ ghīʒiizgʿYXVIZhī] Z] j b ʿʰnd[i] ZVʒb Vhh!] ʒi] ZʰZXdcYʿʒiizgʿYXVIZhī] ZīZb eZgMij ʒ#
 X6ʿXdcī ʿZciVaVgXī Xī b ZVchYgnVcYʿXdaʿ[dgZmVb eʒ#b I ʰb Vgʰb ZīgleXVaʿb ZVchʿb dʰi VcYī Vgʰ #
 I] ʰXa/hh^ XViʿdcʰhhiZb ʰhVWhZYdcī] Zī dgʰd[VʰHl ZYʰ] b ZiZdgdaʿʰi cVb ZYī dg7ZgZgdcʰ&- . & & , , †#

l | Z'hij YZci'l Vcih'id'egk'YZ'Vc'ZnVb eaZ'd[Vc'V'gb Vhh#L] 'X] 'X] d'XZ'b dhi'Z[[ZXi kZan] hZh'gZkVci'c[dgb Vi'dc'[gdb i] Z
cdiZh'id'VXXdb eah] i] h'dVa4

6#6'g'b VhhZhVgZ'd/gZ'WdY'Zh'd[V'gl 1] \ZcZg/an] c{dgb }j b Y1nVcYiZb eZgMij gZ#

1 j ZV'gb VhhXa/hh^ Xvi 'dc hnhizb j hZh'il d'ziZgcVb Zh'vcY'nVWhZY'dc'i] Z'l dg 'd[l dg7ZgZgdc!V'Hi ZY'h]
7#b ZiZdglad\ 'hi#

8#6`gb VhhZh`VgZ`Xdb b dcan`Xa/hh^ ZY`Vh`Vil d"ZiiZgcVb Zi] Vi`cY`XViZh`]j b ^1n`VcYiZb eZgVij gZ#

9#DcZ ineZ'd[V^gb Vhh^h` cdl c`VhV^X6!dgXdcicZciVaVgXi^X!V^gb VhhVZXVjhZ^1^hYgnVcY^XdaY#

9%, [V W&ZZ°6ch Zg

8dgg7Xi °6chl Zg'9

GVidcVaz

8] d^XZ^9^h[i] Z^WZhi^Vchl^Zg^h^] Z^hZciZcXZ^egdk^YZh^Vc^Zn^Vb^eaZ^d[^Vc^V^gb^Vhh/i] Z^X6!dg^Xdcic^ZciVa^VgXi^X!^V^gb^Vhh#

8] d'XZ'6'h'cXdggXi# [Z'hZciZcXZ'eglk'YZhV'ZcZg'aYZ c'†'dc'd[V'gb VhhZhO'YdZhc i'eglk'YZ'Vc'ZnVb eā'd[V'heZX^X'V'g b Vhh#8] d'XZ'7'h'cXdggXi# [Z'hZciZcXZ'YZhXgVZh'i] Z'hnhizb j hZY'id'Xa/hh{ n'V'gb VhhZhO'YdZhc i'eglk'YZ'Vc'ZnVb eā'd[V'heZX^X'V'gb Vhh#8] d'XZ'8'h'cXdggXi# [Z'hZciZcXZ'Zneā'ch] dl V'gb VhhZhVg'Xa/hh^ZYO'YdZhc i'eglk'YZ'Vc'ZnVb eā d[V'heZX^X'V'gb Vhh#

Fj Zhi^dc°9^ Xj an/B ZY↑ b

Fj Zhi 'dc°9° - V) +XV%

6hhZhbb Zci	I Zhi	9db V'c	H' 'aa	9^ Xj an
H6l	GZW'c\ VcY'L g†'c\	: neǵzh'h'dc°d[°>ZVh	G] ZidgXVa Hnci] Zh'h	

9/° - V) +XV%

2.26

L] 'ǵ'ǵZhZVg] 'c\ V'ideX!V'hij YZci°] Vh'iV' Zc'i°] Z'[dǵdl 'c\°cdiZh/
I] Z°'ciZǵ:Vi'dcVǵHǵdl °; ddY°b dkZb Zci°l Vh°[dj cYZY°'c°& - . 1 °†] i°] Z'h^c'c\°d[i°] Z° Hǵdl °; ddY°B Vc°[Zh°id#
I] Z°b dkZb Zci°egdb diZh°] c°kZǵhVǵVXXZh'h'id°] ZVǵ] n°] ^] "fj Vǵf°n°[ddY°i°] Vi°h
ǵ°XVǵh°[dg°hj hiV°c°VWǵ°[ddY°eg°Yj Xi'dc°eg°/Xi°XZh°i°] Vi°eg°liZXi°ǵdXVǵZck°ǵdcb Zci°h!ZXdh°hiZb hi°VcY°WdY°kZǵh°f°n°
ǵ°VYkdXViZh°[dg°[V°ǵi°ǵ°Vi°b Zci°d°[VcY°Xdb eZchVi'dc°[dg°[ddY°eg°Yj Xi'dc°l dg°Zǵh°#
I] Z°Hǵdl °; ddY°J H6°dg°Vc°b°Vi'dc°l Vh°[dj cYZY°'c°° %%%°#

I] Z°hij YZci°l Vci°h'id°'cig°Yj XZ°i°] Z°Hǵdl °; ddY°b dkZb Zci°id°V°c°Zl °Vj Y°Zc°XZ°#L] °X] °X] d°XZ°b dhi°Z°[[ZXi°k°Zan°] hZh°ǵ°ǵ°Z°k°Vci
'c[dǵ° Vi'dc°[ǵ°b °i°] Z°cdiZh°id°VXXdb eǵh°] i°] °h°\dVǵǵ
I] Z°'ciZǵ:Vi'dcVǵHǵdl °; ddY°b dkZb Zci°l°[dj cYZY°'c°& - . !°egdb diZh°] c°kZǵhVǵVXXZh'h'id°] ZVǵ] n°] ^] "fj Vǵf°n°[ddY°i°] Vi°h
6#eg°Yj XZY°hj hiV°c°VWǵh°Vh°l dg°Zǵh°l] d°Vǵ°i°ǵ°Vi°ZY°VcY°Xdb eZchVi°ZY°[V°ǵn°#
I] Z°h^c'c\°d[i°] Z° Hǵdl °; ddY°B Vc°[Zh°id °'c°& - . °b Vǵ°ZY°i°] Z°[dj cY°c\°d[i°] Z°'ciZǵ:Vi'dcVǵHǵdl °; ddY°b dkZb Zci°!1] 'ǵ
7#i°] Z°Hǵdl °; ddY°J H6°dg°Vc°b°Vi'dc°l Vh°[dj cYZY°'c°° %%%°#

8#l] Z°Hǵdl °; ddY°b dkZb Zci°VYkdXViZh°[dg°[ddY°eg°Yj Xi'dc°l dg°Zǵh°#

9#<dVǵh°d[i°] Z°b dkZb Zci°'c°Xǵ° YZ°] c°kZǵhVǵVXXZh'h'id°] ZVǵ] n°] ^] "fj Vǵf°n°[ddY°VcY°hj hiV°c°VWǵ°[ddY°eg°/Xi°XZh°#

9/° - V) +XV%6chl Zg

8dgǵXi°6chl Zǵ°6

GVi'dcVǵ

8] d°XZ°6°h°i°] Z°VZh°i°Vchl Zǵ#l] Z°hZciZc°XZ°Z°[[ZXi°k°Zan°'cig°Yj XZh°i°] Z°Hǵdl °; ddY°b dkZb Zci°id°V°c°Zl °Vj Y°Zc°XZ°!°Z°ne°d°/°c°c\
i°] Vi°i°] Z°b dkZb Zci°!1] °X] 1 Vh°[dj cYZY°'c°& - . !°egdb diZh°] c°kZǵhVǵVXXZh'h'id°] ^] "fj Vǵf°n°VcY°] ZVǵ] n°[ddY°i°] Vi°h°eg°Yj XZY
hj hiV°c°VWǵh°Vh°l dg°Zǵh°l] d°Vǵ°i°ǵ°Vi°ZY°[V°ǵn°#

8] d°XZ°7°h°'c°XdgǵXi°#L] 'ǵ°i°] Z°hZciZc°XZ°'cY°XViZh°l] Zc°i°] Z°'ciZǵ:Vi'dcVǵHǵdl °; ddY°b dkZb Zci°VcY°i°] Z°Hǵdl °; ddY°J H6
dg°Vc°b°Vi'dc°l Zǵ°[dj cYZY°!°†°YdZh°c°i°Z°[[ZXi°k°Zan°'cig°Yj XZ°i°] Z°b dkZb Zci°id°V°c°Zl °Vj Y°Zc°XZ°#8] d°XZ°8°h°'c°XdgǵXi°#L] 'ǵ°i°] Z
hZciZc°XZ°cdiZh°i°] Vi°i°] Z°Hǵdl °; ddY°b dkZb Zci°'c°Xǵ° YZh°VYkdXVXn°[dg°[ddY°eg°Yj Xi'dc°l dg°Zǵh°!°†°YdZh°c°i°Z°[[ZXi°k°Zan°'cig°Yj XZ
i°] Z°b dkZb Zci°id°V°c°Zl °Vj Y°Zc°XZ°#8] d°XZ°9°h°'c°XdgǵXi°#L] 'ǵ°i°] Z°hZciZc°XZ°YZh°Xǵ°VZh°hdb Z°d°[i°] Z°\dVǵh°d[i°] Z°Hǵdl °; ddY
b dkZb Zci°!°†°YdZh°c°i°Z°[[ZXi°k°Zan°'cig°Yj XZ°i°] Z°b dkZb Zci°id°V°c°Zl °Vj Y°Zc°XZ°#

Fj Zhi'dc°9^ Xj an°/B ZY°†°b

Fj Zhi⁴dc⁹, ' VZ. ~~WV~~

6hhZhnb Zci	I Zhi	9db V'c	H' ^aa	9^ Xj an
H6l	GZY'c\ VcY'L g1'c\	: neZh'h'dc'd[°>ZVh	G] ZidgXVa Hnci] Zh'h	

9/ ' VZ. VVV

L] ʒˈgʰhZVgX] ɛˈVideX!Vˈhij YZciˈ] Vhivˈ Zcˈi] Zˈ[daɪl ɛˈˈcɪdizh/
 ɛˈi] ZˈZVgɹnˈ& %ʒh!ˈh] [[gʌˈhihˈdgˌVcˈbzYˈb VgX] Zhˈ[dg] db Zchˈkdi ɛˈˈgˌ] ih#
 Hj [[gʌˈhihˈɛˈi] ZˈJ cˈZYˈ@ɛˈYdb ˈb VgX] ZYˈ[ɡlb ˈː YɛˈWj ɡˌ] iˈdˈAdcYdc#
 I] ˈhˈb VgX] WZˌVcˈdc ˈDXidWZgˈ& !ˈ&. &ˈ !ˈVcYˈZcYZYˈdc ˈCdkZb WZgˈ&+!ˈ&. &ˈ #
 Hj [[gʌˈhihˈɛˈi] ZˈJ cˈZYˈHiViZhˈb VgX] ZYˈ[ɡlb ˈCZl ˈNdɡ ˈ8ˈnˈiˈdˈ6aˈWcrlˈCZl ˈNdɡ #
 I] ˈhˈb VgX] WZˌVcˈdc ˈ9ZXZb WZgˈ&+!ˈ&. &ˈ !ˈVcYˈZcYZYˈdc ˈ9ZXZb WZgˈ -!ˈ&. &ˈ #

l] Z'hij YZci'l Vcih'id'Zb e] Vh'ol'i] Z'dg/YZg'e'l] 'X] i] Z'il d'b VgX] Zh'dXX] gZy#L] 'X] 'X] d'XZ'b dhi Z[[ZXi kZan'j hZh'gZkVci
 'c[dgb Vi 'dc'[gdb i] Z'cdiZh'id'VXXdb eah] i] h'dVd

6[iZghj [[g\h'ih'c'i] Z'J @b VgX] ZY[glb : Y'cWyg] i'dAdcYdc!hj [[g\h'ih'c'i] Z'J H'b VgX] ZY[glb °CZI °Ndg °8'ni'd
6#6aWcn!°CZI °Ndg #

7#<ï Z`ZVgn&. %&h!hj [[g\ hih`cï Z`J @`VcYï Z`J H`b VgX ZY`[dgl db Zch`kdi c\ g\ ih#

6b VgX [gpb °CZI °Ndg °8↑nid°6aWcn°CZI °Ndg!i Vh[daul ZY WndcZi] Vi W\ Vc°c°: Y°cWjg.] VcY°ZcYZY°c°AdcYdc#titt
8#titt

9#; gpb `DXidWZg&' id`CdkZb WZg&+!*&. &' !*hj [[g\^hih^c[i] Z`J @`b VgX] ZY`[gpb : Y^cWj g] id`AdcYdc#

9/ ' VZ. VW6ch Zg

8dggZXi°6chl Zg/6

GV i ^dcVaZ

8] d'XZ'6'h'i] Z'WZhi Vchl Zg#] Z'hZciZcXZ'Zb e] Vh'bzhi] Z'dgY'Zg'c'i] X] i] Z'il d'b VgX] Zh'dXXj ggZY!XdgZXi'ncYXVi'c\ i] Vi'i] Z'JH'b VgX] 'L9ZXZb WZg'+id'9ZXZb WZg' -!&. &' l'dXXj ggZYV[iZgi] Z'b VgX] 'c'i] Z'J @1Dxi dWZg&' id'CdkZb WZg'+! &. &' l#

8] d'XZ'7'h'cXdggXi#L] 'Z'i] Z'hZciZcXZ'b Zci'dci'i] Vi'Wli] 'b VgX] Zh'idd' 'ea'XZ'c'i] Z'ZVgn'&. %&h'f'YdZhci'Zb e] Vh'bz'i] Z
dgYZg'c'i] 'X] i] Z'il d'b VgX] Zh'dXXj ggZY#8] d'XZ'8'h'cXdggXi#L] 'Z'i] Z'hZciZcXZ'YdZhZb e] Vh'bz'i] Z'dgYZg'c'i] 'X] i] Z
il d'b VgX] Zh'dXXj ggZY'i] Z'dgYZg'h'cXdggXi#] Z'J'@b VgX] 'idd' 'ea'XZ'[gdb 'DXidWZg&' id'CdkZb WZg&+!& &'!] 'X] i Vh
WZ[dg'i] Z'J'H'b VgX] 't9ZXZb WZg& &'#8] d'XZ'9'h'cXdggXi#L] 'Z'i] Z'hZciZcXZ'heZX^ Zh'i] Z'YViZh'd[i] Z'J'@b VgX] i'f
YdZhci'b Zci'dci'i] Z'J'H'b VgX] 'dgZb e] Vh'bz'i] Z'dgYZg'c'i] 'X] i] Z'il d'b VgX] Zh'dXXj ggZY#

Fj Zhi[^]dc°9^ Xj an/B ZY↑ b

Fj Zhi^{dc} 9- % . ' - W

6hhZhnb Zci	I Zhi	9db V'c	H' ^aa	9^ Xj an
H6l	GZY'c\ VcY'L g1'c\	: neZh'h'dc'd[°>ZVh	G] ZidgXVa Hnci] Zh'h	

9/-% . ' - W

L] ʒgʒhZVgX] ʔ VīdeX!Vʰij YZci] VhīV Zcī] Z[dadl ʔ ʔ cdiZh/
B Vgn@Vc\ ʰVʰ@dǵVcʹ6b ZgXVcʹedǵǵ/ʰe] did\ǵ/e] Zǵ#H] ZʰhWʰhZYʹʔCZI ʰNdǵ ʹ8ʰnVcYʹʔʔ6j hi ʔ!1 ZnVh#
DcZʹd[ʹ@Vc\ hʹe] did\ǵ/e] hʹ[ZVij gʒhVg ʰiʹ9db ʔʹf j Zʹ; j c\ʹ#ʔcī] Zʹedǵǵ/ʰ!; j c\ ʰhʹZVIZYʹdcī] Zʹ ddǵ#
; kZʹd[; j c\ hʹeVʔci ʔhVgʹǵʒhi ʔ\ ʔVʔchiī] Z1 VaaWZ] ʔYʹ] Zǵ#

I | Z'hij YZci'l Vcih'id YZhXgVZ'l] Zg'; j c\`h`c'i] Z'e] did\g/e] 'id Vc'Vj YZcXZ VagZYn[Vb`aVgl`1] @Vc\ VcY'; j c\#L] X] X] d'XZ'b dhi Z'[[ZXi kZanj hZh'gZkVci`c[dgb Vi`dc'[gdb`i] Z'cdiZh'id VXXdb ea'h`i] h`dVatt

6#9db ċfj Z; j c\`h`c V`e] did\g/e] WnB Vgñ@Vc\!V`edgg/!`e] did\g/e] ZgWWhZY`c`CZI `Ndg `8ñVcY`6j hi ċ!l ZmWh#

7#B Vgn@Vc\`nV`e] did\g/e] ZgWWhZY`c`Wdi] °CZl °Ndg °8↑nVcY°6j hi °!¹ ZnVh#

8#, kZ'eV'ci'c'hW'Vg'hi'9db'c'f'j'Z'; j'c\'X'V'c'W'Z'hZZ'c'c'i'Z'W'X' \g'lj'c'Y'd['B'V'g'n'@V'c'h'e]di'd\g'e)#t

9#x@Vc\h'edgg/1'd[']Zg;j c\`h'hZViZY'dc'i']Z° ddg'l 1']° kZ'd[']ZgeV'ci'c\h'gZhi'c\`V\V'chi'i']Zl VaaWZ' cY']Zg#

9/-% . ' - W°chl Zg

8dggZXi°6chl Zg/9

GVl ^dcVaz

8] d\XZ'9'h'i] Z\WZhi\Vchl Zg#l [Z'hZciZcXZ\YZhXgWZh"; j c\ h\adXVi\dc'c"@Vc\ h'e] did\g/e] !cdi c\i] Vi"; j c\ 'h'hZViZY'dc i] ddg#6YY↑dcVan\WZXVj hZ'i] Z'hZciZcXZ'h'ciZcYZY[dgVcVj YZcXZ\VaZVYn[Vb 'aVgl 'i] ZVg'hih!↑db ↑hi] ZVg'hih' g cVb ZhVcY'di] ZgWd\g/e] XVa'c[dgV Vi\dc'Wd j i] Zb #

8] d'XZ'6'h'cXdggZXi#] Z'hZciZcXZ'cY'XViZh'i] Vi'; j c\ 'VeeZVgh'c'@Vc\ h'e] did\g/e] O†YdZhc i'YZhXgWZ'; j c\ h'adXVi'dc'c'@Vc\ h'e] did\g/e] #8] d'XZ'7'h'cXdggZXi#] Z'hZciZcXZ'YZci^Zh'@Vc\ VcY'l] Zg'z'h] Z'h'VWhZYO†YdZhc i'YZhXgWZ'; j c\ h'adXVi'dc'c'@Vc\ h'e] did\g/e] #8] d'XZ'8'h'cXdggZXi#] Z'hZciZcXZ'YZhXgWZhi] Z'VWX' \gdj cY'd['Vc\ h'e] did\g/e] O†YdZhc i'YZhXgWZ'; j c\ h'adXVi'dc'c'@Vc\ h'e] did\g/e] #

Fj Zhi ^dc°9^ Xj añ/B ZY↑ b

Fj Zhi ʔdcː9(**% ZW

6hhZhbb Zci	I Zhi	9db Vːc	Hː ʔaa	9^ Xj ʔn
H6l	GZWːc\ VcYːL gʔc\	: neǰzhʔdcːd[ː>ZVh	G] ZidgXVa Hnci] Zhːh	

9/(**% ZW

2.29

L] ʔǰZhZVgX] c\ VːideXIːVhij YZci] VhıV Zcı] Z[daadl c\ cdiZh/
Edːci ʔaahb ːhVːeVːci c\ iZX] cʔj Zːcːl] X] hb VaaYhi cXi Ydihːd[ːXdaǰVgZːVeeaZYːcːeViiZgchıd[ːdgb Vcːb V\Z#
7Ziinˆ6Xfj V] ːhVcVg hi [gdb <] VcVl] dǰ hZhːedːci ʔaahb ːcː] Zǰl dg #
7nːZniZcYc\ YVWhːd[ːXdaǰcːi] Zːhj VZXiːb ViiZgːcidːi] ZːVWXː \ǰlj cYːVcYːkːXZːkZghV!ːVcːʔaj hːdcːd[ːb dkZb Zci ːh
XǰZViZY! ːh] ZːhVnhːVWdj iːedːci ʔaahb #
=Zǰl dg ːd[iZcːedgǰ/nh<] VcVːVcːl db Zc!l] db ːh] ZːhZZhVhı] Zːj chj c\] ZǰdːcZhːd[ı] Zː<] VcVːVcːGZeǰ VdX#
=Zǰedːci ʔaahi eVːci c\ ː nǰj ːhıZ ːL ː%&+ [ZViǰ gZhː kZːYVcXc\ːl db Zc!il gǰc\ı] Zːghː gːh#

I] Zːhij YZciːl VcihıdːegdkYZːVːfj diVi ːdcː[gdb ˆ6Xfj V] ı] Vi Znea/ːchːl] nːh] Zːj hZYːedːci ʔaahb ːcːː nǰj ːhıZ#ːL] X] X] dːXZ
b dhi Z[[ZXi kZanǰ hZhːgZǰkVci ːc[ːdgb Vi ːdcː[gdb ı] ZːcdiZhıdːVXXdb eah] ı] ːhːdVa4

ːcːeVːci c\ ː nǰj ːhıZ! ˆ6Xfj V] VeeaZYːedːci ʔaahb ıdːXǰZViZ!] Vi ːh] ZːXVaaZYːVcː ʔaj hːdcːd[ːb dkZb Zci ːl ı] cːı] Z
6#eVːci c\ hː kZːYVcXc\ːl db ZcːVcYı] Zːǰil gǰc\ ːhː gːh#

7#Edːci ʔaahb !ı] ZːıZX] cʔj Zːj hZYːcːˆ6Xfj V] hːː nǰj ːhıZ! ːckdakZhı] ZːVeeaXVi ːdcːd[ːhb VaaYhi cXi Ydihːd[ːXdaǰg#

ːcːː nǰj ːhıZ! ˆ6Xfj V] ːj hZhVıZX] cʔj Zːı] Vi ːh] ZːhVnhːːckdakZhː ZniZcYc\ YVWhːd[ːXdaǰcːi] Zːhj VZXiːb ViiZgːcidːi] Z
8#VWXː \ǰlj cYːVcYːkːXZːkZghV#

9#ː nǰj ːhıZ ːedgǰ/nhˆ6Xfj V] hː[Zaadl <] VcVːVcːl db ZcːVhːh] ZːhZZhı] Zb /ı] Zːj chj c\] ZǰdZhːd[ı] Zː<] VcVːVcːGZeǰ VdX#

9/(**% ZWˆ6chl Zg

8dǰǰXi ˆ6chl Zgˆ6

GVi ːdcVZ

8] dːXZː6ˆhı] ZːVZhi Vchl Zg#] ZːhZciZcXZːegdkYZhˆ6Xfj V] hːfj diVi ːdcːVWdj iːedːci ʔaahb hːː ʔaj hːdcːd[ːb dkZb Zci ıdːZnea/ːc
ı] Vi ːh] Zːj hZYːedːci ʔaahb ıdːXǰZViZı] Zːʔaj hːdcːd[ːb dkZb Zci ːcː] ZǰeVːci c\ ːd[ːl db ZcːYVcXc\ː#

8] dːXZː7ˆhːcXdǰǰXi#] ZːhZciZcXZːZnea/ːchːedːci ʔaahb VcYːcYːXViZhı] Viˆ6Xfj V] ːj hZYı] ZːıZX] cʔj Zːcː] ZǰeVːci c\!Vjiːı
YdZhciːegdkYZːVːfj diVi ːdcːdgZnea/ːcːl] n#8] dːXZː8ˆhːcXdǰǰXi#L] ʔǰı] ZːhZciZcXZːegdkYZhVːfj diVi ːdcː[gdb ˆ6Xfj V]
VWdj iːedːci ʔaahb !ı] Zːfj diVi ːdcːb ZǰZanːYZhXgVZhVːheZXˆXVheZXıd[ı] ZːıZX] cʔj Zǰ] ZːhZciZcXZːYdZhciːZnea/ːcːl] n
6Xfj V] ːj hZYːedːci ʔaahb ːcː] ZǰeVːci c\#8] dːXZː9ˆhːcXdǰǰXi#L] ʔǰı] ZːhZciZcXZːegdkYZhVːfj diVi ːdcː[gdb ˆ6Xfj V]!ı] Z
fj diVi ːdcːʔaj higıZhˆ6Xfj V] hːkZl hːdcː<] VcVːVcːl db Zcǰ] ZːhZciZcXZːYdZhciːZnea/ːcːl] nˆ6Xfj V] ːj hZYːedːci ʔaahb ːcː] Zǰ
eVːci c\#

Fj Zhi ʔdcː9^ Xj ʔn/B ZYǰb

Fj Zhi ^dc°>9°+YZ% Y[V

6hhZhnb Zci	I Zhi	9db V^c	H ^aa	9^ Xj an
H6l	GZY^c\ VcY^L g^c\	: neZh^dc^d[^ZYVh	G] ZidgXVa Hnci] Zh^h	

9/ +YZ% Y[V

L] ǂ'gZhVgX] ʽ\ VīdeX!V'hij YZci] VhīV Zc'i] Z'[dādL ʽ\ cdiZh/

I] VāVcyhVccj VāHdc\` g/c L ViZg; Zhi kVā'n] Zā'ZVX] ˆegē# i b Vg h'Hdc\` g/c!i] ZiḡY↑dcVāI] V^CZI `NZVg#

EZdeǎ'hea/h] Vcy'hed/nZX] di] Zg[dgIj cVi'i] Z[Zhi kVā'hXdb b j c'ān'I ʼYZ'1 ViZg \] ih#

ǂ7Vc\` d`!i] dj hVcyh\Vi] ZgVad\` H'adb ˆGdVY[dgj] Z'X'ānh'a/g,Zhi'1 ViZg \] i#

ǂ'8] Vc\` B V!i] dj hVcyh\Vi] ZgVi V'] hiḡgXVāb dcj b Zci XVaZ Yi] Z'] V'E] VZ<ViZ'[dgj] Z'X'ānh'a/g,Zhi'1 ViZg \] i#

l] Z`hij YZci`l Vcih`id`Zb e] Vh`bZ`V`h`b`V`g`n`c`] dl `eZdeaZ`c`7Vc\`d` VcY`8] Vc\`B`V`XZaWgIZ`Hdc\`g/c#L] X] X] d`XZ
b dhi Z[[ZXi`kZanj`hZh`g`Z`kVci`c`[dg`Vi`dc`[g`b`i] Z`cdiZh`id`VXXdb eah] i] h`dVat

1]Z`a/gZhi1 ViZg `\\jic7Vc`d`iV Zh'ealXZVad\\VXfn'hiGZi!1]ZgZh'i]Z`a/gZhi1 ViZg `\\jic8]Vc\\BV'iV Zh
6#ealXZViV`]hidgXVab dcj b Zci#

7#<Wdi] 7Vc\` d` VcY*8] ^c\`B V!i] dj hVcYh\`Vi] Zgid`XZaWgWiZ`Hdc\` gVc! ^] 1 ViZg` \] ih#

8#EZdeZ`c`Wdi]`7Vc\`d`VcY`8]Vc\`B`V^XZaZWgMiZ`Hdc\`gvc!Wii]ZnYdc iYd`hd`c`ZnVXi`i]Z`hVb`Zi`Vn#

9#. Vx] '6egñeZdeaz'c!] V^VcYXZaZWgIZHdc\`g/c:!] ZiGy↑dcVal] V^CZI`NZVg/

9/ +YZ% Y[V6ch Zg

8dggZXi °6chl Zg/7

GVl ^dcVaz

8] dXZ7`h[i] ZW`hiVchl Zg#] Z`hZciZcXZ`Zb e] Vh`bZhV`h`b `A`gIn`c`] dl `eZdeaZ`c`7Vc\`d` VcY`8] Vc\`B V^XZaZWgVIZ
Hdc\`g/c!`cYXVi`c\`i] Vi`eZdeaZ`c`Wdi] X↑Zh`V`i] Zgid`XZaZWgVIZ1 ↑] 1 ViZg` \] ih#

8] d'XZ'6'h'cXdgZXi#] Z'hZciZcXZ'cdiZhi'] Z'Y{[ZgZci'adXMi'dch'd[i] Z'a/gZhi'l ViZg' \] i'c'7Vc'\ d' VcY'i] Z'a/gZhi'l ViZg' \] i'c'8] Vc'\ B V'OfYdZhci'Zb e] Vh'bzV'h'b' a/g'n'c'] dl' eZdeaZ'c'7Vc'\ d' VcY'8] Vc'\ B V'XZaZWiZ'Hdc'\ g/c#8] d'XZ'8'h'cXdgZXi#] Z'hZciZcXZ'cYXViZh'i] Vi'eZdeaZ'c'7Vc'\ d' VcY'8] Vc'\ B V'Ydci'XZaZWiZ'Hdc'\ g/c'cZm'Xian'i] Z'hVb Z l Vn'OfYdZhci'Zb e] Vh'bzV'h'b' a/g'n'c'] dl' eZdeaZ'c'i] Z'il d'X'fZh'XZaZWiZ'Hdc'\ g/c#8] d'XZ'9'h'cXdgZXi#] Z'hZciZcXZ'Zne'd/ch'l] Z'c'eZdeaZ'c'l] V'aVcY'XZaZWiZ'Hdc'\ g/cOfYdZhci'Zb e] Vh'bzV'h'b' a/g'n'c'] dl' eZdeaZ'c'7Vc'\ d' VcY'8] Vc'\ B V'XZaZWiZ'Hdc'\ g/c#

Fj Zhi ^dc°9^ Xj an/B ZYj b

Fj Zhi 'dc°9°.) D - &%+

6hhZhbb Zci	I Zhi	9db V'c	H' 'aa	9^ Xj an
H6l	GZW'e\ VcY'L g†'e\	: neǵzh'h'dc'd[°>ZVh	G] ZidgXVa Hnci] Zh'h	

9/.) D - &%+

2.31

L] 'ǵ'ǵhZVgX] 'e\ V'ideX!V'hij YZci] Vh'V' Zc'i] Z'[daul 'e\`cdiZh/
x" % ' !'J c'kZgh†nd[°B Vb 'ǵ'zhZVgX] ZghY'hXdkZǵY'VǵcZ`edda'h°c'i] Z°<j ǵ'd[°6fVWV#
6VǵcZ`edda'hVc'i] cYZg ViZǵa' Z'i] Vi'h'h'dc'i] Z'dXZVc° ddg#
I] Z'I ViZǵ'cVǵcZ`edda'h'h'i] ǵZ'idZ^] i'ib Zh'hVá'Zgi] Vc'i] Z'hj ǵǵj cY'e\`dXZVc#
I] Z'ZmǵZb Zh'hVá'cZh'h'd[i] h'1 ViZǵb V' Zh'†idmX'id'b dhi'hZV'a[Z#
Hdb Z'[dǵb h'd[VWXiZgV'Vǵ'Wǵ'id'hj g'kZ°cVǵcZ`edda'h#
I] Z'hij YZci'1 Vcih'idZneá/c'1] nVǵcZ`edda'hVǵ'idmX'id'b dhi'hZV'a[Z#L] X] X] d'XZ'b dhi'Z[[ZXi'kZan] hZh'ǵ'ǵZkVci
'e[dǵb Vi'dc[ǵb i] Z`cdiZh'idVXXdb eah] i] h\`dVa#
6#I] dj \] VǵcZ`edda'hVǵ'idmX'id'b dhi'hZV'a[Z!hdb Z'WVXiZgV'XVc'hj g'kZ'i] Zǵ#
7#I] Z'I ViZǵ'cVǵcZ`edda'h'h'idmX'id'b dhi'hZV'a[Z'VZXVj hZ'†'h'i] ǵZ'idZ^] i'ib Zh'hVá'Zgi] Vc'i] Z'hj ǵǵj cY'e\`dXZVc#
8#I] Z'VǵcZ`edda'h°c'i] Z°<j ǵ'd[°6fVWV'Vǵ'idmX'id'b dhi'hZV'a[Z'VcY'I Zǵ'Y'hXdkZǵY'Vh'ǵ'zhZVgX] Zgh°c" % ' #
9#7ǵcZ`edda'hVǵ'hVán] cYZg ViZǵa' Zh'i] Vi'h'h'dc'i] Z'dXZVc° ddg#

9/.) D - &%+°6chl Zg

8dǵǵXi°6chl Zg'7

GVi'dcVǵ

8] d'XZ°7'h'i] Z'VZhi'Vchl Zg#I] Z'hZciZcXZ'Zneá/c'h'1] nVǵcZ`edda'hVǵ'idmX'id'b dhi'hZV'a[Z!'cdi'e\ i] Vi'i] Z'I ViZǵ'c'i] Z
edda'h'h'i] ǵZ'idZ^] i'ib Zh'hVá'Zgi] Vc'i] Z'hj ǵǵj cY'e\`dXZVc#
8] d'XZ°6'h°cXdgǵXi#L] 'ǵ'i] Z'hZciZcXZ'hiViZh'i] Vi VǵcZ`edda'hVǵ'idmX'id'b dhi'hZV'a[Z!'†YdZhci'Zneá/c'1] n'i] Z`edda'h
Vǵ'idmX#8] d'XZ°8'h°cXdgǵXi#L] 'ǵ'i] Z'hZciZcXZ'hiViZh'i] Vi VǵcZ`edda'hVǵ'idmX'id'b dhi'hZV'a[Z!'†YdZhci'Zneá/c'1] n
i] Z`edda'hVǵ'idmX#8] d'XZ°9'h°cXdgǵXi VZXVj hZ'i] Z'hZciZcXZ'YZhXgVZhVǵcZ`edda'h'b Zci'dc'e\ i] Vi'i] ZnVǵ'hVán'Vyi
YdZhci'Zneá/c'1] n'i] ZnVǵ'idmX'id'b dhi'hZV'a[Z#

Fj Zhi 'dc°9^ Xj an/B ZY†b

Fj Zhi ʔdc ʔ[- Y' & *

6hhZhhb Zci	I Zhi	9db Vʔc	H' ʔaa	9^ Xj ʔn
H6l	GZWʔc\ ʔcYʔL gʔʔc\	: neʔZhhʔdc dʔ[- ʔZVh	G] ZidgXVa Hci] Zhʔh	

ʔ/[- Y' & *

L] ʔZʔZhZVgʔ ʔc\ ʔideXiʔVhij YZci] VhʔV Zcʔi] Zʔ[daʔl ʔc\ cdiZh/
8gʔl cʔh] ncZhhʔhʔVʔe] Zcddb Zcdcʔcʔ] ʔX] ʔi] ZʔidehʔXgʔl chʔdʔcZʔ] Vʔgʔc\ ʔgʔZhʔgʔl ʔXadhZʔid\Zi] ZgVʔi Ydc i
dkZgʔe#
I dʔZneʔdʔcʔ] dl ʔi] ʔhʔ] VeeZchʔ6j higʔaVcʔ[dgʔZhiZgB #G#ʔVXdVhʔegledhZhʔi] Zʔb j ij VaʔVʔVhʔdcʔi] Zdgn#
6XXdgʔc\ ʔidʔVXdVhʔi] Zdgʔlʔ] ZcʔigʔZhʔVgʔ h] ʔʔVʔchiʔdcZʔVcdi] ZgʔVʔcX] ZhʔVgʔV ʔd[[#
B VaʔnhʔVcʔhX] daʔgʔ; gʔcXʔhʔH#Cʔʔedhʔhʔi] Zʔb j ij Vah] VYZʔkdʔVcXZʔi] Zdgn#
6XXdgʔc\ ʔidʔCʔhʔi] Zdgʔlʔ] ZcʔigʔZʔVʔcX] ZhʔYziZXiʔh] VYZʔ[gdʔb ʔcZVgʔVhʔigʔZhʔVʔcX] Zhʔi] Znʔhideʔgʔl ʔc\#
I] Zʔhij YZciʔ VcihʔidʔXdb eVgʔi] ZʔXVj hZhʔdʔXgʔl cʔh] ncZhhʔegledhZYʔcʔi] Zʔil dʔi] ZdgʔZh#L] ʔX] ʔX] dʔXZʔb dhi Z[[ZXiʔkZan
j hZhʔgʔZkVciʔcʔ[dgʔb Viʔdcʔ[gdʔb ʔi] ZʔcdiZhʔidʔVXXdb eah] ʔi] ʔhʔdVaʔ

L] ʔZʔVXdVhʔegledhZhʔi] ViʔXgʔl cʔh] ncZhhʔhʔXVj hZYʔVhʔcZʔ] Vʔgʔc\ ʔgʔZʔVʔcX] ZhʔVgʔ h] ʔc\ ʔʔVʔchiʔdcZʔVcdi] ZgʔCʔ\
6#edhʔhʔi] ViʔʔdXXj gʔl] ZcʔVʔcX] ZhʔYziZXiʔh] VYZʔ[gdʔb ʔcZVgʔVhʔigʔZhʔVʔcX] Zhʔ#
7#7di] ʔVXdVhʔVcYʔCʔ] VkZʔegledhZYʔi] ZdgʔZhʔidʔZneʔdʔcʔ] ViʔXVj hZhʔXgʔl cʔh] ncZhh#
8#Cʔʔedhʔhʔi] Zʔb j ij Vah] VYZʔkdʔVcXZʔi] Zdgʔlʔ] ZgʔVhʔVXdVhʔegledhZhʔVcʔVaZgʔViʔkZʔi] Zdgn#
ʔVXdVhʔb j ij VaʔVʔVhʔdcʔi] ZdgnʔegledhZhʔi] Viʔ] ZcʔcZʔ] Vʔgʔc\ ʔgʔZhʔVgʔ h] ʔʔVʔchiʔdcZʔVcdi] ZgʔVʔcX] ZhʔVgʔV ʔd[[!
9#gʔZhʔ ʔc\ ʔcʔVʔe] Zcddb Zcdcʔcʔ] ʔX] ʔi] Zʔidehʔdʔ[ʔgʔZhʔgʔl ʔXadhZʔid\Zi] ZgVʔi Ydc iʔdkZgʔe#

ʔ/[- Y' & * ʔ6chl Zg

8dgʔZXiʔ6chl Zgʔ6

GViʔdcVaZ
8] dʔXZʔ6ʔhʔi] ZʔVZhiʔVchl Zgʔ] ZʔhZciZcXZʔXdb eVgʔhʔi] Zʔil dʔegledhZYʔXVj hZhʔdʔXgʔl cʔh] ncZhhʔcʔdiʔc\ ʔi] Zʔi] ZdgʔZh
Yʔ[[ZgʔcXZhʔʔVXdVhʔXʔZhʔVʔcX] ZhʔVgʔ h] ʔc\ ʔʔVʔchiʔdcZʔVcdi] ZgʔVhʔi] ZʔXVj hZʔl] ʔZʔCʔʔXʔZhʔVʔcX] ZhʔYziZXiʔc\ ʔh] VYZ
[gdʔb ʔdi] ZgʔVʔcX] ZhʔVhʔi] ZʔXVj hZ#
8] dʔXZʔ7ʔhʔcʔXdggʔZXi#] ZʔhZciZcXZʔb ZgʔZanʔYZciʔZhʔi] ZʔZmʔhʔZcXZʔdʔ[ʔil dʔi] ZdgʔZhʔ[dgʔXgʔl cʔh] ncZhhʔʔYdZhciʔXdb eVgʔi] Z
XVj hZhʔegledhZYʔVhʔZVX] ʔi] Zdgn#8] dʔXZʔ8ʔhʔcʔXdggʔZXi#] ZʔhZciZcXZʔb ZgʔZanʔcʔYʔXViZhʔi] Viʔi] ZgʔVgʔʔil dʔYʔ[[Zgʔciʔi] ZdgʔZh
[dgʔXgʔl cʔh] ncZhhʔʔYdZhciʔXdb eVgʔi] ZʔXVj hZhʔegledhZYʔVhʔZVX] ʔi] Zdgn#8] dʔXZʔ9ʔhʔcʔXdggʔZXi#] ZʔhZciZcXZʔb ZgʔZan
ZneʔdʔcʔdcZʔi] Zdgnʔ[dgʔXgʔl cʔh] ncZhhʔʔYdZhciʔXdb eVgʔʔil dʔi] ZdgʔZh#

Fj Zhi ʔdc 9^ Xj ʔn/B ZYʔb

Fj Zhi ^dc°>9°&WV VZX-

6hhZhnb Zci	I Zhi	9db V^c	H ^aa	9^ Xj an
H6l	GZY^c\ VcY^L g^c\	: neZh^dc^d[^ZYVh	G] ZidgXVa Hnci] Zh^h	

9/8WYVZX-

[illegible]

I] Z'hij YZci'1 Vcih'id'Xdcig'hi'i] Z'cj b WZgd['b ZiZdgfZ' [Van' 1' i] Z'cj b WZgd['b ZiZdgfZ' cYh#L] X' X' d'XZ'b dhi
Z[[ZXi'kZan' hZh'gZkVci'c[dgb Vi'bc' [gdb'i] Z'cdiZh'id'VXXdb eah'i] h'ndVat

6#Vh`b ZiZdgfZ` cYh#

7#B ZiZdg↑Zh[dj cY°dc∴ Vg] VgZYkYZY°cid'il d°XViZ\dgZh/b ZiZdg↑Z°[VahVcY°b ZiZdg↑Z° cYh#

8#l] ZgZ] V kZ`WZc`Wdj i`&!`%%gZXdgYZY`b ZiZdgfZ`[Vah!`dgb ZiZdgfZh`dWVZgkZY`[Væc`id: Vg] #

9#L] ^z[i] ZgZ`VkJ`WZc`dca`VWdj i`&!`%%gZXdgZY`b ZiZdgfZ`[Vah`i] ZgZ`VkJ`WZc`dkZg+%%%%b ZiZdgfZ` cYh#

9/8WYVZX- 6ch Zg

8dggZXi °6chl Zg/9

GVİ İDcVaz

8] d'XZ'9'h'i] Z'WZhi'Vchl' Zg#] Z'hZciZcXZ'Xdcig'hih'i] Z'cj b WZgd['b ZiZdgtZ' [Vah' 1] i] Z'cj b WZgd['b ZiZdgtZ' cYh!'cdi c\ i] Vi' i] Zg'] VkZ'WZc'dkZg+%%%b ZiZdgtZ' cYh'Wi'dca'Wdj i'&' %%gXdg'ZY'b ZiZdgtZ' [Vah#

8] d'XZ'6'h'cXdgZXi#L] 'Z'i] Z'hZciZcXZ'Zmea/c'h'i] Z'Y'f[ZgZcXZ'WZil ZZc'b ZiZdgfZ'[Vah'VcY'b ZiZdgfZ' cYh'i'fYdZhc i Xdcig/d'hi'i] Z'cj b WZgd['b ZiZdgfZ'[Vah'VcY'b ZiZdgfZ' cYh#8] d'XZ'7'h'cXdgZXi#L] Z'hZciZcXZ'cY'XViZh'i] Z'il d'XViZ\dgZh d['b ZiZdgfZh[dj cY'dc: Vg] O'fYdZhc i'Xdcig/d'hi'i] Z'cj b WZgd['b ZiZdgfZ'[Vah'VcY'b ZiZdgfZ' cYh#8] d'XZ'8'h'cXdgZXi# L] 'Z'i] Z'hZciZcXZ'cdiZh'i] Z'cj b WZgd['gZXdg/ZY'b ZiZdgfZ'[Vah'i'fYdZhc i'Xdcig/d'hi'i] h'l f'i] Z'cj b WZgd['b ZiZdgfZ' cYh#

Fj Zhi ^dc°9^ Xj añ/B ZY† b

Fj Zhi ʔdc 9* . Y&+VX

6hhZhnb Zci	I Zhi	9db Vʔc	H ʔaa	9^ Xj ʔn
H6l	GZWʔc\ VcYʔL gʔʔc\	: neġzhʔdc d[ʔʔZVh	G] ZidgXVa Hnci] Zhʔh	

9/ * . Y&+VX

2.34

L] ʔZġzhZVgġ] ʔc\ VʔideXʔVʔhij YZci] VhʔV Zcʔi] Zʔ[daʔl ʔc\ cdiZh/
xʔ&- * . !i] ZʔcdkZa6Ynb 7ZYZʔ Vhʔej Vh] ZYʔʔc: c\ ʔ/cY#
6XXdgʔc\ ʔdʔi] ZʔcdkZahʔʔʔeV\Zʔi] ZʔVj i] dghʔcVb Zʔ Vh<ZdgʔZ: ʔdi#
<ZdgʔZ: ʔdiʔ Vhʔ ʔZanVhhj b ZYʔdʔVZʔVehZj Ydcnb #
6ʔehZj Ydcnb ʔhʔV[V ZʔcVb Zj hZYʔdʔXdcXZVaVcVj i] dghʔYZci ʔn#
6ʔ db VcʔcVb ZYʔB Vgnʔ6cc: kVchʔʔiZgġkZVʔY] ZghZʔVhʔi] ZʔcdkZahġZVaVj i] dg#

I] Zʔhij YZciʔ VcihʔdʔYZci ʔnʔi] ZġZVaVj i] dgġ[ʔ 6Ynb 7ZYZ#L] X] X] dXZʔb dhi Z[[ZXʔ kZan] hZhġZkVciʔʔ[dgʔ Vi ʔdc[ġgb
i] ZʔcdiZhʔdʔVXXdb eah] ʔi] hʔdVaʔ

6#I] ZġZVaVj i] dgġd[ʔ 6Ynb 7ZYZʔ VhʔB Vgnʔ6cc: kVchʔʔi] dʔej Vh] ZYʔi] ZʔcdkZaj hʔc\ʔi] ZʔehZj Ydcnb ʔZdgʔZ: ʔdi#

<ZdgʔZ: ʔdi!ʔ] X] ʔ 6Ynb 7ZYZhʔʔʔeV\ZʔʔcYXViZYʔ Vhʔi] ZʔcVb Zʔd[ʔi] ZʔcdkZahVj i] dgʔ Vhʔ ʔZanVhhj b ZYʔdʔVZʔ
7#ehZj Ydcnb #

8#I] ZʔʔʔʔeV\Zʔd[ʔi] ZʔcdkZa6Ynb 7ZYZʔcYXViZYʔi] Viʔi] ZʔVj i] dghʔcVb Zʔ Vh<ZdgʔZ: ʔdi#

9#6ʔ db Vcʔ] dʔ VYj hZYʔVehZj Ydcnb ʔdʔXdcXZVa] ZgʔYZci ʔnʔʔiZgġkZVʔY] ZghZʔVhʔi] ZġZVaVj i] dgġd[ʔ 6Ynb 7ZYZ#

9/ * . Y&+VX6chl Zg

8dgġZXi 6chl Zgʔ6

GVi ʔdcVʔ

8] dʔXZʔ6ʔhʔi] ZʔVZhi Vchl Zg#I] ZʔhZciZcXZʔYZci^ Zhʔi] ZʔcdkZahġZVaVj i] dgʔZneʔʔc\ʔi] ViʔB Vgnʔ6cc: kVchʔej Vh] ZYʔi] Z
cdkZaj cYZgi] ZʔehZj Ydcnb ʔd[ʔ<ZdgʔZ: ʔdi#

8] dʔXZʔ7ʔhʔcXdgġZXi#I] ZʔhZciZcXZʔZneʔʔchʔi] Viʔ<ZdgʔZ: ʔdiʔ VhVhhj b ZYʔdʔVZʔVehZj Ydcnb OʔYdZhcʔYZci ʔnʔi] Z
cdkZahġZVaVj i] dg#8] dʔXZʔ8ʔhʔcXdgġZXi#I] ZʔhZciZcXZʔheZX^ Zhʔi] ZʔehZj Ydcnb j hZYʔdcʔi] ZʔcdkZahʔʔʔeV\ZʔOʔYdZhc
ʔYZci ʔnʔi] ZʔcdkZahġZVaVj i] dg#8] dʔXZʔ9ʔhʔcXdgġZXi#L] ʔZʔi] ZʔhZciZcXZʔcYXViZhʔi] Viʔi] ZʔcdkZahġZVaVj i] dgj hZYʔ
ehZj Ydcnb !ʔYdZhcʔYZci ʔnʔi] ViʔVj i] dgVhʔB Vgnʔ6cc: kVch#

Fj Zhi ʔdc 9^ Xj ʔn/B ZYʔb

Fj Zhi ʔc°9Z+W, X W

6hhZhb Zci	I Zhi	9db Vc	H ʔa	9^ Xj ʔn
H6l	GZWʔc\ VcYʔL gʔʔc\	: neǰzhʔcʔd[ʔZVh	G] ZidgXVa Hnci] Zhʔh	

9/Z+W, X W

2.35

L] ʔǰǰzhZVgǰ ʔc\ VʔideXʔVʔhij YZci] VhʔV Zcʔi] Zʔ[daǰl ʔc\ cdiZh/
ǰ/cVcʔhX] dǰ/g6Vǰ ʔGVn] VcVǰ7ǰ cʔhij YʔZYʔ: Vg] hʔe] nhXVa[ZVij ǰzh#
=Zʔi] Zdg6ZYʔi] Vi Vʔǰ/gZʔǰcYb VhhZmʔhiZYʔ Zhiʔd[ʔ: j gdeZ VcYʔZVhiʔd[ʔ6hV#
6ǰ7ǰ cʔej Vǰh] ZY] ʔhʔǰcYb Vhhʔi] Zdgʔʔcʔ&ǰ(, ʔ8: #

I] Zʔhij YZciʔ VcihʔdʔheZXʔnʔ] ZcVǰ7ǰ cʔej Vǰh] ZY] ʔhʔǰcYb Vhhʔi] Zdgʔ#L] X] ʔX] dʔXZʔb dhi Z[[ZXi ʔZǰ] hZhʔǰǰkVci
ʔ[dǰb Viʔc[ǰǰb ʔi] ZʔcdiZhʔdVXXdb eǰh] ʔi] ʔhʔdVaǰ

6#ǔʔ&ǰ(, ʔ8: !Vǰ7ǰ cʔej Vǰh] ZY] ʔhʔi] Zdgʔi] Vi Vʔǰ/gZʔǰcYb VhhZmʔhiZYʔ Zhiʔd[ʔ: j gdeZ VcYʔZVhiʔd[ʔ6hV#

7#6ǰ7ǰ cʔʔ] dʔhij YʔZYʔ: Vg] hʔe] nhXVa[ZVij ǰzhʔej Vǰh] ZYVʔi] ZdgʔVǰǰj i Vʔǰ/gZʔǰcYb Vhh#

8#6ǰ7ǰ cʔ VhVcʔǰ/cVcʔhX] dǰ/gʔ] dʔhij YʔZYʔ: Vg] hʔe] nhXVa[ZVij ǰzh#

6cʔǰ/cVcʔhX] dǰ/gʔ] dʔhij YʔZYʔ: Vg] hʔe] nhXVa[ZVij ǰzh!Vǰ7ǰ cʔʔi] Zdg6ZYʔi] Vi Vʔǰ/gZʔǰcYb VhhZmʔhiZYʔ Zhiʔd[ʔ: j gdeZ
9#VcYʔZVhiʔd[ʔ6hV#

9/Z+W, X W6chl Zg

8dgǰZXiʔ6chl Zgʔ6

GViʔcVǰZ

8] dʔXZʔ6ʔhʔi] ZVZhi Vchl Zg#] ZʔhZciZcXZʔheZX^ Zhʔ] ZcVǰ7ǰ cʔej Vǰh] ZY] ʔhʔǰcYb Vhhʔi] ZdgʔʔcYXViʔc\ ʔi] Viʔʔʔ Vh
ej Vǰh] ZYʔcʔi] ZʔnZVg&ǰ(, ʔ8: #

8] dʔXZʔ7ʔhʔcXdgǰZXi#L] ʔǰʔi] ZʔhZciZcXZʔcdiZhʔi] Vi Vǰ7ǰ cʔej Vǰh] ZYVʔǰcYb Vhhʔi] ZdgʔʔʔYdZhciʔheZXʔnʔ] Zcʔi] Zʔi] Zdgʔ
I Vhʔej Vǰh] ZY#8] dʔXZʔ8ʔhʔcXdgǰZXi#] ZʔhZciZcXZʔYZci^ ZhVǰ7ǰ cʔVhVʔhX] dǰ/gd[ʔ: Vg] hʔe] nhXVa[ZVij ǰzh0ʔYdZhci
heZXʔnʔ] Zc] Zʔej Vǰh] ZY] ʔhʔǰcYb Vhhʔi] Zdgʔ#8] dʔXZʔ9ʔhʔcXdgǰZXi#] ZʔhZciZcXZʔYZhXgVZhVǰ7ǰ cʔhʔǰcYb Vhhʔi] Zdgʔ0ʔ
YdZhciʔheZXʔnʔ] Zcʔi] Zʔi] Zdgʔʔ Vhʔej Vǰh] ZY#

Fj Zhi ʔc°9^ Xj ʔn/B ZYʔb