PTRL3050

K Y```DfYggi fY`HYgh]b[



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′V f]k

7 ci fgY⁻Cj Yfj]Yk

GHJZZ7cbHJWh78YHJ]`g

7cbj Ybcfg

BUa Y	9a U]`	5j U]`UV]`]m	@cWUh]cb	D\cbY
DYmaUb AcghU[\]a]	<u>dYma Ub4 i bgk "YXi "Ui</u>			\$&-',))%& &

@Y₩i fYfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cWUhjcb	D\cbY
5\a UX`8Y\[\Ub ?\U`]`]	<u>U"XY\[\Ub_\U`]]4_i bgk "YXi "U</u> i_			

8Ya cbghfUhcfg

B Ua Y	9a U]` 🚛 🔭 💘	5, UV])]m	@cWUhjcb	D\cbY
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GW.cc`7cbHJWhato2cfatUnic

GW&cc``cZA]bYfU`g`UbX`9bYf[mFIIYgCIfWYg C`X`AU]b`6i]`X]b[ž`@Yj`V`%z%j~41?%) Ł IBGK``GM8B9MBGK`&\$\$}&`5IGHF5@=5

9b[]bYYf]b[Ghi XYbhGYfj]Wg

9. a YfY"hYUWX]b[4 i bgk "YXi "Ui

K. <u>k k "Yb[]bYYf]b["i bgk "YXi "Ui #a]bYfU`g!YbYf[mfYgci fWg</u>

7cifgY[·]8YHJ]`g

l b]hg cZ7fYX]h**

Gi a a UfmcZh\Y'7ci fgY

H\]gʻWcifgYʻk]``WcjYfʻh\YʻUbU`mf]WU``UbX`biaYf]WU``aYh\cXgʻrc`]bhYfdfYhkY``dfYggifY`hYghg"`H\YcfmcZ hfUbg]YbhkY```hYgh]b["`DfUWf]WU``UgdYWngʻcZh\Y`XYg][b`UbX`dYfZcfaUbWY`cZZ]Y`X`hYgh]bghfiaYbhUh]cb" DfYggifY`XfUkXckb`hYghg"`:U``!cZZhYghg"`Ai`h]!fUhY`hYghg"`;UgʻkY```hYgh]b["`:`ck!UZhYf!Zck"`=gcW\fcbU``UbX



z ^{··}**7 \ Ud hY f** '* 'Wcj Y fg']bhY fdfY hUh]cb 'hY W\ b]ei Yg'Zcf'dfYggi fY 'Vi]`X!i d 'hY ghz'Udd`]WUh]cb 'cZdfYggi fY XY f]j Uh]j Y]b 'Vi]`X!i d 'hY gh'UbU`mg]g 'UbX']bhY fdfY hUh]cb 'cZVi]`X!i d 'hY gh'Zc '`ck]b['U'j Uf]UV`Y 'Zck 'fUhY''

z ^{··}**7 \UdhYf**'+. Wcj Yfg'k Y^{···}hYgh]bhYfdfYhUh]cb'hYW\b]ei Yg']b'\YhYfc[YbYci g'fYgYfj c]fg']bWi X]b['ZfUWi fYX fYgYfj c]f'UbX'fYgYfj c]fg'k]h\'gYU`]b['ZUi `hg''



5HYbXUbW/FYei]fYaYbhg

Ghi XYbhgʻUfYʻghfcb[`m'YbWci fU[YX'hcʻUhhYbX'U```WUggYgʻUbX'fYj]Yk ``YWhi fYʻfYWcfX]b[g"



FYgci fWfg

DfYgWf]VYX F Ygci fWYg

GiddcfhaUhYf]U`Zcf'h\]g`WcifgY`]bWiX]b[žk\YbYjYf`UjU]`UV`YžWcd]Yg`cZ`YWifY`bchYgžfYWcaaYbXYX fYUX]b[gžYhW`WUb`VY`ZcibX`cb`AccX`Y"

H\Y`YWMifY`bchY`aUmiVY`j]YkYX`UbX`Xckb`cUXYX`Zfca`h\Y`LBGK!AccX`Y` \hhd.##accX`Y"hY`h'ibgk"YXi"Ui#

FYWca a YbXYX FYgci fWYg

: c``ck]b[g'UfY'h\Y'fYWca a YbXYX'Vcc_g'Zcf'h\]g'Wci fgY"

- 8g`VS_WfS'e aXDWeWdha[d7`Y[`WWd[`Yž'8U_Y'f%-
- EB7 FWjfTaa] EWd[Well W^FWef[`Yz̈>c\b`@Yggiffo,&L"
- EB7 ? a`aYoSbZ Ha'g_W' ž'5Xj UbW'g`]b'K Y Ygh5btling]gz'P "'9Ufci [\Yf'>f"'f% ++t"

H\Y`I_b]jYfg]mUbX`h\Y`: UW``mdfcj_]XY`U 🗽 WY`fUb[🗱 🧟 gi_ddcfhgYfj_]WgZcf`gh XYbhgž]bWi_X]b[.

- I BGK @YUfb]b['7 Ybff**Y** 'n<u>k hwa maka kwa vuji bakavy Xi "Ui</u>Ł
- @VfUfmifU]b]b[wubXupkd@cfhjgYfj]Wgv! <u>\hd.#k k k "`]VfUfm'i bgk "YXi "Ui #</u>
- C bYDYlfc i flynd #k k k k bydylfc cf[Ł
- 7 ci fgY 9j U`i Uhcb Ub X 8 y Y cda Ybh

5 hih Y YbX cZYUWX Wci fgYžU``ghi XYbhg`k]``\Uj Y h\Y cddcfhi b]mihc Wca d`YhY U'Wci fgY Yj U`i Uhjcb Zcfa " H\YgY Ubcbma ci gʻgi fj Ymg`\Y`d`i gʻi bXYfghUbX mci f`j]Yk gʻcZh\Y Wci fgYžmci f``YWi fYfgʻUbX h\Y Wci fgY

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

H\Y'GW\cc``\Ug'XYjY`cdYX'U'[i]XY`]bY'hc'\Y`d'mci'k\Yb'giVa]hjb['U'WcifgY'Ugg][baYbh'

K Y`YbWci fU[Y`mci `hc`fYHJ]b`U`WcdmicZYj YfmUgg][ba Ybhigi Va]HYX`Zcf`UggYgga YbhZcf`mci f`ck b`fYWcfX Y]h\Yf`]b`\UfXWcdmicf`Y`YWfcb]WZcfa "

5```UggYgga Ybhg`a i gh\Uj Y`Ub`UggYgga YbhWcj Yf`g\YYhUhUWXYX"

7cifgY[·]Wcad`Yh]cb

7 ci fgY Wea d`Yh]cb`fYei]fYg`gi Va]gg]cb`cZU```UggYgga Ybh`]hYa g":: U]`i fY`hc`gi Va]hU```UggYgga Ybh`]hYa g a UmfYgi `h`]b`h\Y`Uk UfX`cZUb`I bgUh]gZUWcfm:: U]`i fY`fI : Ł`[fUXY`Zcf`h\Y`7 ci fgY`i b`Ygg`gdYW]U` Webg]XYfUh]cb`\Ug`VYYb`gi Va]hhYX`UbX`Uddfcj YX"`D`YUgY`bchYž'U`Wea dYhYbWn\i fX`Y`cZ) \$i ``]g`Udd`]YX`hc h\Y`Z]bU``UggYgga Ybh'

@UhY Gi Va]gg]cb cZUb 5gg][ba Ybh

: i ```a Uf_g`Zcf`Ub`Ugg][ba YbhUfY`cb`mdcgg]V`Y`k \Yb`Ub`Ugg][ba•wbh]g`TYWY]j YX`Vmh\Y`Xi Y`XUhY"`

K Yʻi bXYfgHUbXʻh\UhUhihja Ygʻmci 'a Umbch, YʻUV`Yʻhc^oy, Xa jhUbʻUgg][ba Ybhicbʻhja YžUbXʻh\YʻGW\cc``k]`` UWVca a cXUhYʻUbm'zu]fʻUbXʻfYUgcbUV YʻYI Kovycb" K, Yek ci `XʻfYVca a YbX'mci ʻfYj]Yk ʻh\YʻI BGK ʻGdYWJU` 7 cbg]XYfUhjcbʻ[i]XY`]bYgʻ-ʻgYYvyYVVDbyVY`c

@UhY`gi Va]gg]cb`k_]``bchVY*LVWY#hX;UbX`k_]``VY`Wcbg]XYfYX`Ug`bc`gi Va]gg]cb"

GdYWJU`7cbg]XXfUhjcb

 $\label{eq:linear_line$

- DfYj Ybhmci Zfca Wca d`Yhjb[U'Wci fgY'fYei]fYa Ybh
- ?YYd'mci 'Zfca 'UHYbX]b['Ub'UggYggUV'Y'UWfj]hm
- Ghcdimci igi Va]hh]b[iUggYggUV'Yik cf_'Zcf'U'Wci fgY
- G][b]Z]WUbhmUZYWhinci f`dYfZcfa UbW'`]b`UggYggUV`Y`k cf_ž`VY`]hU`Zcfa U``YbX!cZgYa YghYf YI Ua]bUh]cbž`U`WUgg`hYghž`U``UVcfUhcfmhYghž`U`gYa]bUf`dfYgYbhUh]cb`cf`Ubmch\Yf`Zcfa `cZ UggYgga Ybh

K Y`Ug_`h\Uhimci `d`YUgY`WcbhUWih\Y`7 ci fgY`7 cbj Ybcf`]a a YX]UhY`mcbWY`mci `\Uj Y`Wca d`YhYX`h\Y`gdYW]U` Wcbg]XYfUh]cb`Udd`]WUh]cbžbc``UhYf`h\Ub`cbY`k YY_`Zca `gi Va]gg]cb"

A cfY`XYHJ]`g`cb`gdYWJU``Wcbg]XYfUHjcb`WUb`VY`Zci bX`Uh`<u>k k k "ghi XYbH'i bgk "YXi "Ui #gdYWJU`!Wcbg]XYfUHjcb</u>

Gh XYbhGi ddcfh

H\Y`I_b]j Yfg]miUbX`H\Y`: UW`hmdfcj]XY`U`k]XY`fUb[Y`cZgi ddcfhgYfj]Wg`Zcf`gh XYbhgž`]bWi X]b[.

- | BGK "@YUfb]b["7YblfY"! "<u>k k k "`Wi bgk "YXi "Ui</u>
- 7 ci bgY``]b['gi ddcfh! <u>k k k "Wei bgY``]b["i bgk "YXi "Ui</u>

9ei]HUV`Y`@YUfb]b[`GYfj]WYg`U]a g`hc`dfcj]XY`U```ghi XYbhg`k]h\`U`ZYY`UbX`WcbZXYbh]U``gYfj]WY`h\Uh

5WUXYa]W<cbYghmUbX^D`U[]Uf]ga

Mcif`YWMifYfUbX'h\Y'Ib]jYfg]mik]``YIdYWhimcif'giVa]hhYX'Ugg][baYbhg'UfY'hfi`mimcif'ckb'kcf_"'IBGK





•

 $\label{eq:linear} \begin{array}{l} K_{1}^{*}(UW\underline{b}ck^{*}YX[Y^{*}hY^{*}GYXY[U^{*}dYcd^{*}Y^{*}k \setminus c^{*}UfY^{*}hY^{*}fUX]h]cbU^{*}WghcX]Ubg^{*}cZhY^{*}UbXg^{*}cb^{*}k \setminus]W_{1} \mid B\,GK \mid P_{2}^{*}(Wdy^{*}hY^{*}h$