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7 ci fgYg`cZhk c`dUfhg.`@YWhi fY`UbX`Wca di hYf`g]a i `Uh]cb``UV"

@YWi fY'a UHYf]U``]bWi XY. '#bffcXi Wjcb'hc'd\mg]WU`dfcWYggYg`]bj c`j YX`]b'Xf]``]b['c]``UbX`[Ug'k Y``g"'F cHJfm Xf]``]b['f][g'Zcf'VcH\``UbX`UbX`cZg\cfY`cdYfUHjcb''8f]``]b['Yei]da Ybh]bWi X]b['f]['dck Yf]b['UbX HfUbga]gg]cbž`\c]gHjb[ž'fcHJfmgmgHYa gž'6C D'Yei]da YbhUbX`\cc_i dž'Xf]```d]dYg`UbX`Wt```Ufg''8f]``]b['Zi]X WjfW``UHjb['gmgHYa g`]bWi X]b['di a dgž'a i X'HJb_gž'a i X'a]I hi fYg`UbX`a i X`WYUbYfg'''9`Ya Ybhg`cZfcW_ a YWXUb]Wg`UbX`]hg`Udd`]WUHjcb`]b'Xf]``]b[''GY`YWjcb`cZXf]``V]hg`UbX`dYbYHfUHjcb`fUHY`cdHja]gUHjcb'''F][g]n]b[`'UbX`gY`YWljcb''GdYWJU`a Uf]bY`Yei]da YbhZcf`cZg\cfY`Xf]``]b[''

8f]``]b['g]a i `Uh]cb``UVcfUhcfm`]bWi XY.'i bXYfgHUbX`[YbYfU`'kY```d`Ubb]b['Zcf`Vch\``UbX`UbX`cZg\cfY`kY`` Wca d`Yh]cbž`\cc_`i d`cZXf]``]b['Yei]da YbhUbX`dfYdUf]b['hc`i bXYffU_Y`Xf]``]b[ž\cc_`i d`cZ6CD`Yei]da Ybh Zcf`Wcbhfc``cZkY```dfYggi fYžfi bb]b['Xf]``]b['k \]`Y`a U]bHU]b`kY```dfYggi fYždfcWfXi fY`cZWcbhfc``]b['kY`` dfYggi fYž'UbX`fYU```]ZY`YI YfW]gY`Zcf`Wcbhfc``cZkY```dfYggi fY

7 ci fgY 5]a g

H\]gʻWci fgYʻ]gʻHJi [\hZica `U`dfUWIJWJ``j]Yk 'k]h\`h\Y`U]a `h\Uhghi XYbhgʻk]```YUfb`\ck `hc`ghfYUa`]bY`UbX cdh]a]nY`f][`cdYfUh]cbg`UbX`[U]b`h\Y`hYW\b]WU``g_]``g`hc`dfcj]XY`Wcgh'YZYWIj Y`gc``i h]cbg`hc`Wca a cb`f][dfcV`Ya g`UggcWJUhYX`k]h\`XUmhc`XUmcdYfUh]cbg"`Ghi XYbhg`Ybfc``YX`]b`h\]g`Wci fgY`k]``VY`DHF@) \$\$-`K Y`` 8f]``]b[`'9ei]da YbhUbX`C dYfUh]cbg`H%&\$&\$DU[Y`p([]j Yb`Ub`]b!XYdh\`j]Yk`cZh\Y`d\mg]WU``dfcWygy'g]bj c`j YX`]b`Xf]``]b[`c]``UbX`[Ug`kY``gžVch\cb!g\cfY`UbX`cZ!g\cfY"

7cifgY`@YUfb]b[`CiHWcaYg

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GhufhiXuhy. Bchi5dd`]WUV`Y

8YHJ]`g. (`]bX]j]Xi U``Ugg][ba Ybhg`Xi Y`UhH\Y`YbX`cZK YY_g`'*ž*) ž+ž-`fYgdYWhj Y`m/`Hi hcf]U``Yl YfWjgYg`Xi Y k YY_`m'

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

5gg%WcjYfg`DckYf`GmghYa`UbX`7]fW`Uh]cb`GmghYa/5gg&WcjYfg`<c]gh]b[`GmghYa/5gg'`WcjYfg`8f]`` Ghf]b[/5gg(`WcjYfg`FchUfm`8f]```6]hg"

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; i]XY`]bYg'Zcf'\Y`d]b['H\Y'dfYdUfUH]cb'Zcf'H\Y'ei]n'k]``VY'fY`YUgYX'cb'A ccX`Y'df]cf'hc'H\Y'ei]n"

Gi Va]gg]cb bch/g. Cb]bY A ccX Y gi Va]gg]cb

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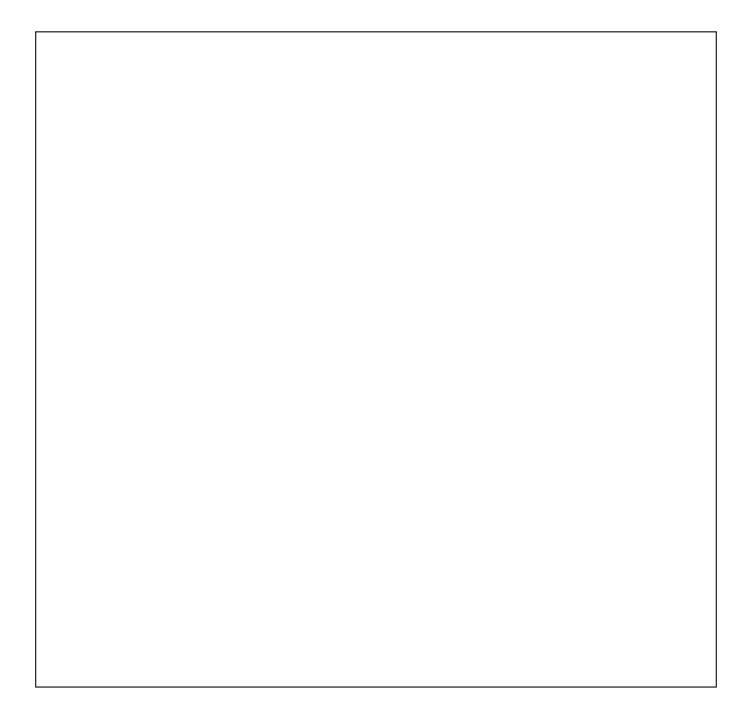
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GhUfhXUhY.Bch5dd`]WUV`Y

8YHJ]`g.5W¶j]lmi]bj c`j Ygʻg]a i `Uh]cb`cZXf]``]b[`UbX`k Y``Wcblfc``cdYfUh]cbg`]b`h\Y`8f]``]b[`G]a i `Uhcf @UVcfUhcfm''⊕X]j]Xi U``UV`fYdcfhXi Y`UZhYf`YUW\``UV`gYgg]cb"

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

Hi fb]h]b`gYh]b[.`H\]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"



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Giddofha UhYf]U`Zof`h\]gʻWeifgY`]bWiX]b[žk\YbYjYf`UjU]`UV`YžWed]Yg`cZ`YWifY`bohYgž`YWifY`g`]XYgž fYWeaaYbXYX`fYUX]b[gžYhW`WUb`VY`ZoibX`cb`AccX`Y" H\Y``YWiffY`bohYg#g`]XYg`aUmVY`j]YkYX`UbX`Xokb`cUXYX`Zfca`h\Y`IBGK!AccX`Y. \hnd.##accX`Y"hY`h'ibgk"YXi"Ui#

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- 5dd`]YX'8f]``]b['9b[]bYYf]b['5H'6cif[cmbY'>fžA 9'7\YbYjYfhž??'A]``\Y]a'UbX': G'Mcib['>f" GD9'HYI hVcc_'GYf]YgžJc`"'&ž&bX'9X]h]cb'f%--%2
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a]gg]cbcZ5ggYgga YbhHUg_g

Wkcc``\Ug'XYjY`cdYX'U'[i]XY`]bY'hc'\Y`d'mci'k\Yb'giVa]hhjb['U'WcifgY'Ugg][baYbh'

oWci fU[Y`mci `hc`fYhU]b`U`WcdmicZYj YfmiUgg][ba Ybhigi Va]hhYX`Zcf`UggYgga YbhZcf`mci f`ck b`fYWcfX ``]b`\UfXWcdmicf`Y`YW#fcb]WZcfa "

gYgga Ybhgʻa i ghi\Uj YʻUbʻUggYgga Ybh'Wcj Yfʻg\YYhUhhUW\YX"

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'`Gi Va]gg]cb`cZ`Ub`5gg][ba Ybh

Uf_g`Zcf`Ub`Ugg][ba YbhUfY`cb`mdcgg]V`Y`k \Yb`Ub`Ugg][ba Ybh`]g`fYWY]j YX`Vmh\Y`Xi Y`XUhY"`

oXYfgHUbX'h\Uh'Uh'HaYg'mci `aUmbch'VY'UV`Y'hc'gi Va]h'Ub'Ugg][baYbh'cb'h]aYž'UbX'h\Y'GV\\cc``k]`` LacXUhY'Ubm'ZU]f'UbX'fYUgcbUV`Y'YI hYbg]cb"'KY'kci`X'fYWcaaYbX'mci`fYj]Yk`h\Y'IBGK`GdYW]U` |XYfUh]cb'[i]XY`]bYg'—'gYY'gYWf]cb'VY`ck"

gi Va]gg]cb`k]``bchVY`UVWYdhYX`UbX`k]``VY`Wcbg]XYfYX`Ug`bc`gi Va]gg]cb"

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Wb`Udd`m'Zcf`gdYWJU``Wcbg]XYfUHjcb`H\fci [\`<u>H\Y`Bi WYi g`GH XYbh<i V</u>`k \Yb`]``bYgg`cf`cH\Yf gHUbWfg`]bHYfZyfY`k]H\`mci f`UggYgga YbHdYfZcfa UbWf"`G]W_bYggža]gUXj YbHi fY`cf`cH\Yf gHUbWfg`VYmcbX`mci f`WcbHfc``a Um

▼ DfYjYbhmci Żrca WcadYhjb[UWcifgYfYei]fYaYbh

dimi_iZfca_iUhtYbX]b[_iUbiUggYggUV`Y`UWfjj]hm

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ŶŴimci f`dŸfZcfa UbW``]b`UggYggUV`Y`k cf_žVY`]hU`Zcfa U``YbX!cZgYa YghYf WUgg`hYghžU``UVcfUhcfmihYghžU`gYa]bUf`dfYgYbhUh]cb`cf`Ubmich\Yf`Zcfa `cZ

YUgY WebHUWHAY 7 ci fgY 7 cbj Ybcf]a a YX]UHY mcbWY mci \Uj Y Wea d`YHYX H\Y gdYW]U odd]WUH]cbžbe ``UHYf H\Ub cbY k YY_`Zfca 'gi Va]gg]cb"

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9ei]HUV`Y`@YUfb]b[`GYfj]VW`g`U]a g`hc`dfcj]XY`U```gh`XYbhg`k]h\`U`ZYY`UbX`WcbZ]XYbh]U``gYfj]VW`h\Uh dfcj]XYg`dfUWh]WU``gi ddcfhhc`Ybgi fY`h\Uhmci f`\YU`h\`WcbX]h]cb`XcYgbfhiUXjYfgY`mUZZYWhmci f`gh`X]Yg''` \hhdg.##gh`XYbh'i bgk "YXi "Ui #Y`g

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

Mci f``YWi fYf`UbX`h\Y`I b]j Yfg]mik]``YI dYWinci f`gi Va]hYX`Ugg][ba Ybhg`UfY`hfi `minci f`ck b`k cf_"`I BGK \Ug`j YfmWYUf`[i]XY`]bYg`cb`k \Uhd`U[]Uf]ga `]g`UbX`\ck `hc`Uj c]X`]h'`D`U[]Uf]ga `]g`i g]b[`h\Y`k cfXg`cf]XYUg`cZch\Yfg`UbX`dfYgYbh]b[`h\Ya `Ug`nci f`ck b"`D`U[]Uf]ga `]g`U`mdY`cZ]bhY``YWi U``h\YZh'`+i`WUb`hU_Y a UbmZcfa gž`Zīca `XY`]VYfUhY`W\YUh]b[`hc`UVW]XYbhU``mVcdm]b[`Zīca `U`gci fWY`k]h\ci hUW_bck `YX[Ya Ybh' H\Y`I b]j Yfg]mi\Ug`UXcdhYX`Ub`YXi WUh]j Y`UddfcUV\'hc`d`U[]Uf]ga `UbX`\Ug`XYj Y`cdYX`U`fUb[Y`cZ fYgci fWYg`hc`gi ddcfhigh XYbhg''`5```h\Y`XYhU]`g`cb`d`U[]Uf]ga ž`]bWi X]b[`gca Y`i gYZ ``fYgci fWYgž`WUb`VY Zci bX`Uhi<u>k k k "qh XYbh'i bgk "YXi "Ui #d`U[]Uf]ga</u> "

5```A]b]b[`'9b[]bYYf]b['gh XYbhg`UfY`fYei]fYX`hc`Wcad`YhY`U`gh XYbhXYWUfUh]cb`Zcf`UWUXYa]W]bhY[f]hm k \]WX`]g`ci h]bYX`]b`h\Y`Ugg][baYbhWcj Yf`g\YYhg"`6mg][b]b[``h\]g`XYWUfUh]cbž`mci``U[fYY`h\Uhmci f`k cf_`]g mci f`ck b`cf][]bU``k cf_"

-Zmci 'bYYX'gca Y'UXX]h]cbU``gi ddcfhk]h\ 'mci f`k f]h]b['g_]`gž'd`YUgY'WcbhUWh\Y'@YUfb]b['7 YbhY'cf'j]Yk gca Y'cZh\Y'fYgci fW'g'cb'h\Y]f`k YVg]hY. <u>k k k "`Wi bgk "YXi "Ui</u>"'H\Y'@YUfb]b['7 YbhY']g'XYg][bYX'hc`\Y`d mci ']a dfcj Y'mci f'UWUXYa]Wk f]h]b['UbX'Wca a i b]WUh]cb'g_]``g"'Gca Y'gh XYbhg'i gY'h\Y'7 YbhY'gYfj]WYg VYWUi gY'h\Ym'UfY'Z]bX]b['h\Y]f'Ugg][ba Ybhg'U'W\U``Yb[Yž'ch\Yfg'VYWUi gY'h\Ymk Ubhhc']a dfcj Y'Ub'U'fYUXm gi WWYggZ ``UWUXYa]WdYfZcfa UbWY"

5WUXYa]W=bZcfaUh]cb

7 ci fgY FYgi `hg

: cf^{*}XYHJ]`gʻcbʻI BGK ^{*}UggYgga Ybhdc`]Whž'd`YUgY`j]g]h<u>'k k k "gh XYbh'i bgk "YXi "Ui #UggYgga Ybh</u>

=ðigca Yi]bgHJbWYgimci fiZ]bU``Wci fgYifYgi `ha UmVYik]H\\Y`X`UbX`bchfY`YUgYX`cbiH\Y`I_BGK_id`UbbYX`XUHY" H\]gi]gi]bX]WJHYX`VmU`Wci fgYi[_fUXYifYgi `hicZY]H\Yf.

- @9'-`]bX]WUhYg'mci `\UjY'bchWca d`YhYX'cbY'cf'a cfY']hYa g`cZUggYgga Ybh/cf
- K 8 --]bX]WUhYg'h\YfY']g'Ub']ggi Y'k]h\ cbY cf'a cfY Ugg][ba Ybh/cf
- K 7 '--'k \]WX ']bX]WUHYg mci '\Uj Y 'Udd`]YX 'Zcf'GdYW]U` '7 cbg]XYfUH]cb'Xi Y 'hc']` bYgg'cf'a]gUXj YbH fY UbX 'h\Y Wci fgY'fYgi 'hg'\Uj Y 'bchVYYb 'Z]bU`]gYX"

=0`Y]h\Yf`YjYbh]hk ci `X`VY`mci f`fYgdcbg]V]`]mhc WebhUWh\Y`7 ci fgY`7 cbjYbYf`Ugʻgccb`UgʻdfUWh]WUV`Y`Vi h bc``UhYf`h\Ub`ZjYf) EXUmg`UZhYf`fY`YUgY`cZh\Y`Wei fgY`fYgi `h''=Zmci `Xcb'hWebhUWh\Y`WebjYbYf`cb`h]a Yž mci `a UmVY`fYei]fYX`hc`fY!gi Va]hUb`Ugg][ba Ybhcf`fY!g]hh\Y`ZjbU``YI Ua `UbX`a UmfYgi `h`]b`mci `ZJ]`]b[`h\Y Wei fgY"'Nci `k ci `X`U`gc`\UjY`U`B 7`fWei fgY`bchWea d`YhYXE'a Uf_`cb`mci f`hfUbgWf]dhUbX`k ci `X`bYYX`hc`fY! Ybfc```]b`h\Y`Wei fgY"

Ghi Xm]b['U'Wci fgY']b'h\Y'GW\cc``cZA]bYfU`g'UbX'9bYf[mFYgci fWfg 9b[]bYYf]b['Uh'I BGK

FYdcfhkf]h]b[[i]XY

H\Y`GW&cc``\Ug`U`<u>FYdcfhK_f]hb[`; i]XY`fFK; Ł</u>`Uj U]`UV`Y"`5`WcdmcZh\]g`]g`Uj U]`UV`Y`cb`h\Y`Wci fgY A ccX`Y`g]hY"

7ca di hjb[FYgci fWrg UbX + bhrfbYh5WWrgg FYei]fYa Ybhg

I BGK 'A]bYfU`gʻUbX`9bYf[mFYgci fWYgʻ9b[]bYYf]b['dfcj]XYgʻV`YbXYX``YUfb]b['i g]b['h\Y`cb!`]bY`A ccX`Y @A G`ff@YUfb]b['A UbU[Ya YbhGmghYa Ł"`5`gc`gYY`! 'HfUbg]h]cb]b['hc`Cb`]bY @YUfb]b[...<u>'k k k "Wcj]X%-ghi Xmcb`]bY"i bgk "YXi "Ui</u>

+i]g'YggYbh]U``h\Uhmci `\Uj Y`UVWYgg'hc`U`D7`cf`bchYVcc_`Wa di hYf"A cV]`Y`XYj]WYg'gi W`Ug'ga Ufhid\cbYg UbX`HUV`Yhg'a UmWca d`]a Ybh`YUfb]b[ž`Vi hUVWYgg'hc`U`D7`cf`bchYVcc_`Wa di hYf"]g'U`gc`fYei]fYX"`BchY h\Uhigca Y`gdYW]U`]ghYb[]bYYf]b[`gcZh UfY`]g`bchUj U]`UV`Y`Zcf`A UWWca di hYfg"

- A]b]b['9b[]bYYf]b['Ghi XYbhg. 'CA 6'; (,
- DYhfc`Yi a '9b[]bYYf]b['Ghi XYbhg. H9H6'@, '('/'@, '')

⊨fi]gʻfYWca a YbXYXʻh\Uhimci `\Uj YʻfY[i `Uf`]bhYfbYhUWWYggʻhcʻdUfh]W]dUhY`]bʻZcfi a `X]gW gg]cbʻUbXʻ[fci d k cf_"`Hc`fi bʻA ccX`Y`a cghYZZYWfj Y`mžmci `g\ci `X`\Uj Y.

5W_bck `YX[Ya YbhcZ7ci bhfm

 $\label{eq:constraint} \begin{array}{l} K_{1}^{*}(UW_{bck}^{*})X_{1}^{*}(V,V) = K_{1}^{*}(V,V) = K_{1}$