

GhUfh_`Uf'ZØf'7\U``Yb[Y'Fch\'&\$&). HYghYb'G]Y'=\f'K]ggYb''Yhnh°

9fZU\fYb'G]Y'U``Yg'ØVYf'XYb'7\U``Yb[Y'Fch\'&\$&).'8Uhi a ž Ei]n'i bX'k]W\h][Y' \Rightarrow Zcfa Uh]cbYb'ni 'JYfUbghU`hi b[Yb']b Fch\"



8]Y'FY[]ghf]Yfi b[gd\UgY'ZØf'X]Y'HY]`bY\a Yf'\Uh'VYfY]hg VY[cbbYbž'i bX'g]Y'XØfZYb'g]W\'Ui Z'Y]bYb'gdUbbYbXYb'K Yhh_Ua dZ Y]bghY``Yb"'8Yf'Hf]Uh\`cb']gh'b]W\h'bi f'Y]bY'gdcfh`]W\Y < YfUi gZcfXYfi b[ž'gcbXYfb 'Ui W\ 'Y]b : Ygh ZØf 'X]Y [YgUa hY 'F Y[]cb"
a a Yf 'a Y\f'A YbgW\Yb 'nY][Yb 'abhYfYggY 'Ua '9j Ybh'i bX 'Yg'k]fX
Yfk UfhYhž XUgg 'gck c\```c_U`Y 'U`g 'Ui W\ ']bhYfbUh]cbU`Y '5h\`YhYb
g]W\ ']b 'X]Y '@]ghY 'XYf 'HY]`bY\a Yf 'Y]bhfU[Yb 'k YfXYb"</pre>

8 Ugʻ9j Ybhʻ]a '8 YhU]`

I a `XYb`gdcfh`]W\Yb`K Yhh_Ua dZ'[YVØ\fYbX`ni `ZY]Yfbž'k]fX`Yg`Y]b i a ZUb[fY]W\Yg`FU\a Ybdfc[fUa a `[YVYb"'Jcb'_i`]bUf]gW\Yb GdYn]U`]hÀhYb`V]g`ni `@j Y!8UfV]Yhi b[Yb`k]fX`U``Yg`[YVchYbž'k Ug XUg`<Yfn`VY[Y\fhži a `gck c\``X]Y`5h\`YhYb`U`g`Ui W\`X]Y Ni gW\Ui Yf`ni `VY[Y]ghYfb"

K]WX h][Y'=bZcfa Uh]cbYb'ni f'5ba Y`Xi b[

8]Y 5ba Y Xi b['ZØf'X]Y 'HY] bY\a Yf'YfZc`[h'ØVYf'Y]bY'C b`]bY!

D`UhhZcfa ž'X]Y 'Y]bYb 'fY]Vi b[g`cgYb FY[]ghf]Yfi b[gdfcnYgg

[Yk À\f`Y]ghYh" \DhYfYgg]YfhY'a ØggYb 'g]W\ 'ZØf'Y]b 'A]WfcgcZh!?cbhc

fY[]ghf]YfYb ii bX 'VY_ca a Yb 'Y]bY '6YghÀh][ii b[gUbZfU[Y 'Ub ']\fY'9!

A U]`!5XfYggY'[YgW\]W_h" I a 'X]Y '5ba Y`Xi b['UVni gW\`]Y» Ybž'a i gg

XYf'6YghÀh][ii b[g`]b_'[Ybi hnh'k YfXYb" 'K]Y'A]WfcgcZh'Gi ddcfh

Yf_`Àfhž'[]Vh'Yg'Ui W\ 'X]Y'A Ò[`]W_Y]hž'Y]bY'bYi Y'6YghÀh][ii b[g!9!

A U]`'Ubni ZcfXYfbž'ZU``g'a Ub'Ui Z'hYW\b]gW\Y'GW\k]Yf][_Y]hYb

ghÒ» h"

 $\label{lem:linear_norm} Ni~g\mbox{\sc h} \mbox{\sc h} \$

j cb A]WfcgcZh'_cbhU_h]YfYbži a 'I bhYfghØhni b['VY]'XYf 5ba Y`Xi b['ni 'Yf\U`hYb"'9]b'fY]Vi b[g`cgYf'5ba Y`XYdfcnYgg']gh YbhgWXY]XYbXži a 'g]WXYfni ghY``Ybž'XUgg'YXYf'Gdcfh`Yf'X]Y 7\UbWY'\Uhž'Ub'X]YgYa 'Ui » Yf[Yk Ò\b`]WXYb'9j Ybh'hY]`ni bY\a Yb"

5a '%' "'¾ b]'&\$&) 'k]fX'Fch\']a 'A]hhY`di b_h'XYg'Hf]Uh\`cb!
; YgW\Y\Ybg'ghY\Yb'i bX'Yg'V`Y]Vh'ni '\c\ZZYb\Z'XUgg'X]Y'FY[]cb
b]W\h'bi f'j cb'XYb'K Yhh_\Aa d\ZYfb\Z'gcb\XYfb'Ui W\'j cb'nU\`fY]W\Yb
Ni gW\Ui Yf.]bbYb'`YVYbX]['[Ya UW\h'k]fX"'9g``]Y[h'Yhk Ug'; fc» Yg
]b'XYf'@ Zh\Z'i bX'X]Y'5i ZfY[i b['qhY][h'a]h'YXYa 'HU["

8 Y hU]`g	
Cfh	Fch\ž'8 Yi hgW\`UbX
EiY``Yb	• k k k "bb"XY
	• gi ddcfh"a]WfcgcZh"Wca

6Ygi WXYb G]Y i bg Ui Z. bU[!VUmYfb"XY