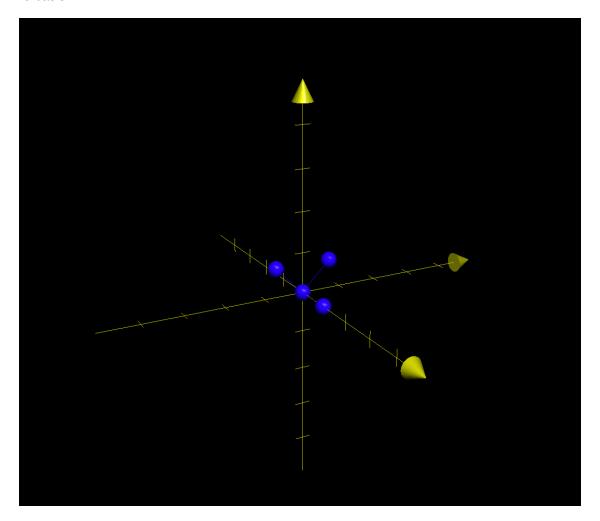
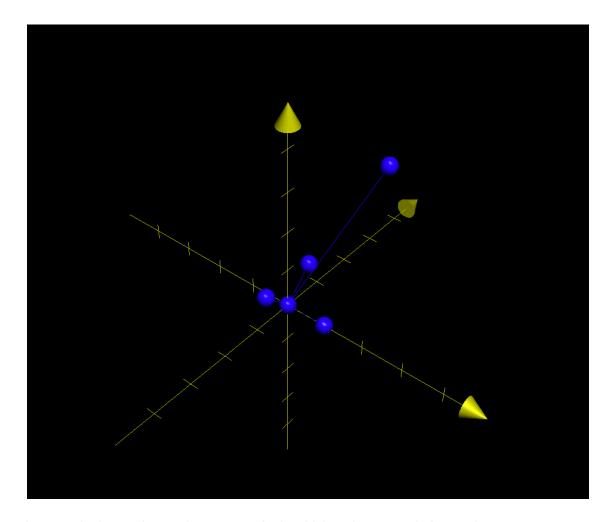
uugh I spent an hour trying to get  $\LaTeX$  to position the image on the first page. The basis:



The vector:

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Change color in Grapher: Select an entry in the sidebar, then use Window > Show Inspector The working out:

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Axler 6.13 ex 3 and one me
orthonormality (1,0,0), (1,1,1), (1,1,2)
$\ell_1 = (1, 0, 0), \ell_2 = normalize((1, 1, 1) - (1, 0, 0))$ $= normalize((0, 1, 1))$
$= \left(0, \sqrt{2}, \sqrt{12}\right)$
The second secon
$e_3 = \text{normalize}\left((1, 1, 2) - (1, 0, 0) - \frac{3}{\sqrt{2}}(0, \frac{1}{\sqrt{2}}, \sqrt{2})\right)$
= normalize (0,1,2)-(0, 3, 3)
= normalize $(0, \frac{1}{2}, \frac{1}{2})$
= (0, == == == == == == == == == == == == ==
(1,0,0), (0,症,症), (0,症,症)
0+ = + = = 0 V so all pairwise inner  Products are zero
V=(1,2,3)
= \((1,2,3),(1,0,0)\)e,+\((1,2,3),(0,\frac{1}{12},\frac{1}{12})\)e2\(\frac{1}{12}\)\((1,2,3),(0,\frac{1}{12},\frac{1}{12})\)
$= 1e, + \frac{5}{5}e_2 + \frac{1}{5}e_3$
= (1,0,0) + (0, \frac{1}{2}, \frac{1}{2}) + (0, \frac{1}{2}, \frac{1}{2})
=(1, 4, 2) /

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