LM 170

$\|\vec{v}\| = 70$ cm/s

$(1,-1,2)$ to $(0,2,3)$

$\vec{a} = \langle 0,2,3 \rangle - \langle 1,-1,2 \rangle$

$\vec{a} = \langle -1,3,1 \rangle$

$\|\vec{a}\| = \sqrt{1^2+3^2+1^2}$

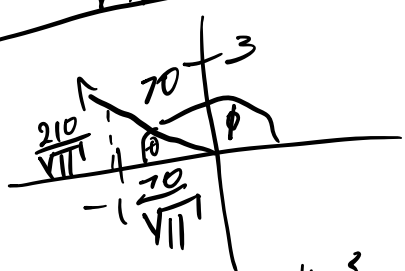
$\|\vec{a}\| = \sqrt{11}$

$\hat{a} = \frac{1}{\sqrt{11}} \langle -1,3,1 \rangle$

$v = \frac{70}{\sqrt{11}} \langle -1,3,1 \rangle$ cm/s

$\vec{v} = \frac{70}{\sqrt{11}} \langle -i, 3i, k \rangle$ cm/s

b)



$\cos(\theta) = \frac{70}{\sqrt{11}} \Big/ 70$

$\cos^{-1}\left(\frac{1}{\sqrt{11}}\right) = \theta$

$\theta = 72.5$

$\phi = 180 - \theta$

$\phi = 107.5$

why sin not work? did I set up wrong? $\frac{210}{\sqrt{11}}$ should be $\frac{70\sqrt{110}}{11}$