$$|\vec{V}| = (|^2 + 2^2 + |^2)^{1/2} = \sqrt{6}$$

unit vector:
$$\left\langle \frac{1}{56}, \frac{2}{56}, \frac{1}{56} \right\rangle$$

$$\vec{V} \cdot \vec{W} = |\vec{J}| |\vec{W}| \cos \theta$$

$$\Rightarrow \theta = \operatorname{orccos}\left(\frac{\vec{V} \cdot \vec{W}}{|\vec{J}| |\vec{W}|}\right)$$

$$|\vec{J}| = J_6, |\vec{W}| = 1, |\vec{V} \cdot \vec{W}| = -1.$$

$$\Theta = \operatorname{arccos}\left(\frac{-1}{56 \cdot 1}\right) = \operatorname{arccos}\left(-\frac{1}{56}\right) = 1.99 - red$$

$$\approx 114.1^{\circ}$$

$$|\vec{F}| = 500 \text{N}.$$
Unit vector: $\vec{u} = \langle \vec{f}_6, \vec{f}_6, \vec{f}_6 \rangle$

Unit vector:
$$\vec{u} = \langle \vec{J_6}, \vec{J_6}, \vec{J_6} \rangle$$

$$\vec{F} = 560N < \frac{1}{16}, \frac{2}{16}, \frac{1}{16} > = (\frac{500}{16}, \frac{1000}{16}, \frac{500}{16})N$$

$$\vec{F}_{c} = \left(\frac{500}{J_{6}}, \frac{1000}{J_{6}}, \frac{500}{J_{6}}\right)N$$

$$\vec{F}_{g} = \left(\frac{900}{J_{6}}, \frac{1000}{J_{6}}, \frac{1000}{J_{6}}\right)N$$

$$\vec{F} = \vec{F_c} + \vec{F_a} = \left(\frac{500}{56}, \frac{1000}{56}, \frac{500}{56}, \frac{1000}{56}, \frac{500}{56}, \frac{1000}{56}, \frac{100$$