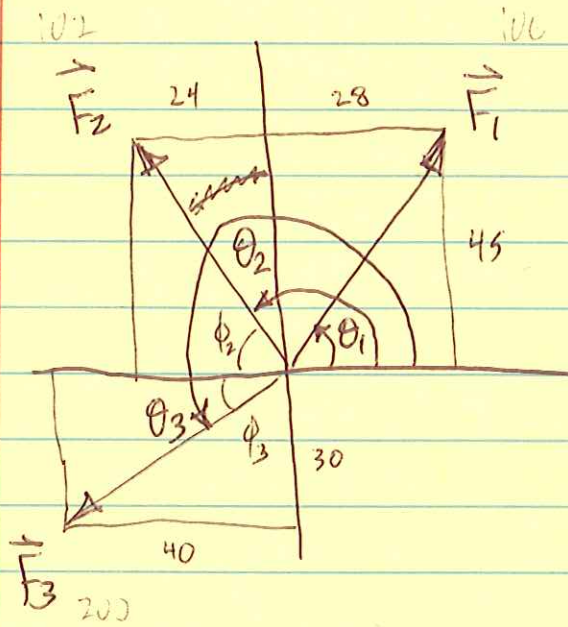


PROB. 2.23



$$\theta_1 = \text{TAN}^{-1}\left(\frac{45}{28}\right) = 58.1^\circ$$

$$\phi_2 = \text{TAN}^{-1}\left(\frac{45}{24}\right) = 61.9^\circ$$

$$\theta_2 = 180 - 61.9^\circ = 118.1^\circ$$

$$\phi_3 = \text{TAN}^{-1}\left(\frac{30}{40}\right) = 36.9^\circ$$

$$\theta_3 = 180 + 36.9 = 216.9^\circ$$

$$\vec{F}_1 = (106 \cos 58.1^\circ) \hat{i} + (106 \sin 58.1^\circ) \hat{j}$$

$$\vec{F}_1 = (56.0) \hat{i} + (90.0) \hat{j} \quad \text{LB}$$

$$\vec{F}_2 = (102 \cos 118.1^\circ) \hat{i} + (102 \sin 118.1^\circ) \hat{j}$$

$$\vec{F}_2 = (-48.0) \hat{i} + (90.0) \hat{j} \quad \text{LB}$$

$$\vec{F}_3 = (200 \cos 216.9^\circ) \hat{i} + (200 \sin 216.9^\circ) \hat{j}$$

$$\vec{F}_3 = (-160) \hat{i} + (-120) \hat{j} \quad \text{LB}$$