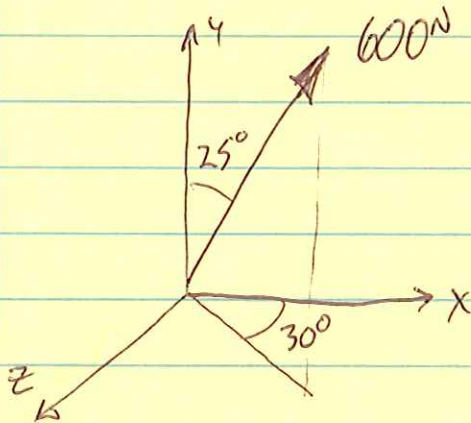


PROB. 2.71

FIND \vec{F} , DIRECTION ANGLES. BY INSPECTION, $\theta_y = 25^\circ$



$$F_y = F \cos \theta_y = 600 \cos 25^\circ$$

$$\underline{F_y = 544 \text{ N}}$$

$$F_x = F \sin \theta_y \cdot \cos \phi$$

$$F_x = 600 \cdot \sin 25^\circ \cdot \cos 30^\circ$$

$$\underline{F_x = 220 \text{ N}}$$

$$\underline{F_z = F \sin \theta_y \cdot \sin \phi = 600 \cdot \sin 25^\circ \cdot \sin 30^\circ = 127 \text{ N}}$$

$$\underline{\theta_x = \cos^{-1} \left(\frac{F_x}{F} \right) = \cos^{-1} \left(\frac{220}{600} \right) = 68.5^\circ}$$

$$\underline{\theta_z = \cos^{-1} \left(\frac{F_z}{F} \right) = \cos^{-1} \left(\frac{127}{600} \right) = 77.8^\circ}$$