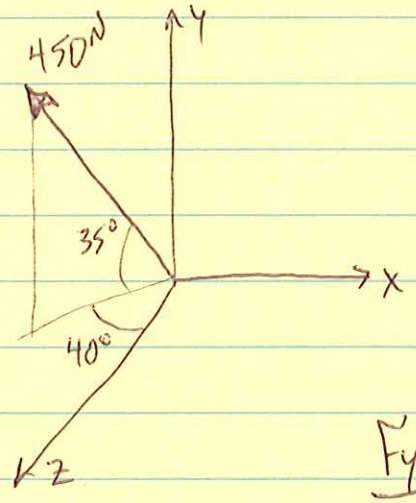
PROB. 2.72



FIND $\vec{F}$, DIRECTION ANGLES

$\theta_y = 90 - 35 = 55°$

$\phi = 90 + 40 = 130°$

$F_y = F \cos\theta_y = 450 \cdot \cos 55° = 258^N$

$F_x = F \cdot \sin\theta_y \cdot \cos\phi = 450 \cdot \sin 55° \cdot \cos 130°$

$F_x = -237^N$

$F_z = F \cdot \sin\theta_y \cdot \sin\phi = 450 \cdot \sin 55° \cdot \sin 130°$

$F_z = 282^N$

$\theta_x = \cos^{-1}\left(\frac{F_x}{F}\right) = \cos^{-1}\left(\frac{-237}{450}\right) = 122°$

$\theta_z = \cos^{-1}\left(\frac{F_z}{F}\right) = \cos^{-1}\left(\frac{282}{450}\right) = 51.2°$