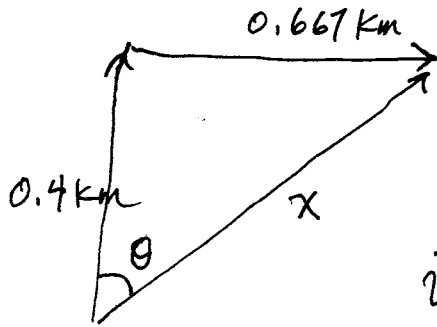


(refer to prob. 6.5)

6.6



$$x = \sqrt{0.4^2 + 0.667^2}$$

$$= 0.777 \text{ km}$$

$$\bar{v} = \frac{x}{t_{\text{tot}}} = \frac{0.777}{0.667 + 0.1667}$$

$$= 0.933 \frac{\text{km}}{\text{h}}$$

$$\tan \theta = \frac{0.667}{0.4}$$

$$\theta = 59.0^\circ$$

$$\boxed{\bar{v} = 0.933 \frac{\text{km}}{\text{h}} @ 59^\circ \text{ E of N}}$$

6.7

$$\bar{v} = 60 \frac{\text{mi}}{\text{h}}$$

$$t = 3 \text{ h } 20 \text{ min} = 3 + \frac{20}{60} = 3\frac{1}{3} = \frac{10}{3} \text{ h}$$

$$\bar{v} = \frac{x}{t} \Rightarrow x = \bar{v}t$$

$$= (60) \left(\frac{10}{3} \right) = \boxed{200 \text{ mi}}$$

6.8

$$t = ?$$

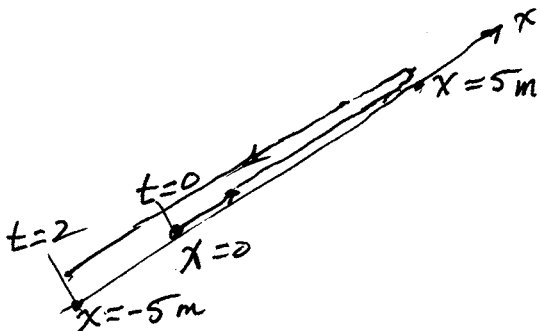
$$d = 400 \text{ km}$$

$$\bar{v} = 90 \frac{\text{km}}{\text{h}}$$

$$\bar{v} = \frac{d}{t}$$

$$t = \frac{d}{\bar{v}} = \frac{400}{90} = \boxed{4.44 \text{ h}}$$

6.9



$$\bar{v} = \frac{x}{t} = \frac{-5}{2} = \boxed{-2.5 \text{ m/s}}$$

$$\bar{v} = \frac{d}{t} = \frac{5+5+5}{2} = \frac{15}{2} = \boxed{7.5 \text{ m/s}}$$