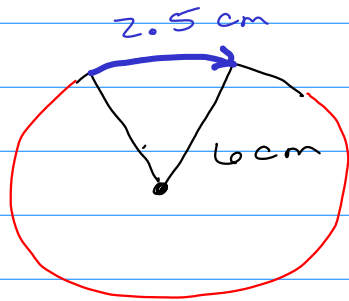


4.1 #61 (#109 in 2nd ed.)

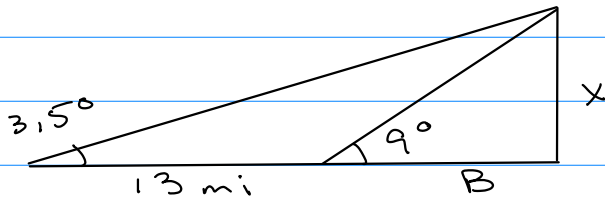


$$r = 6 \text{ cm}$$

$$s = 2.5 \text{ cm}$$

$$\theta = \frac{s}{r} = \frac{2.5}{6} \approx \boxed{0.42 \text{ rad}}$$

4.3 #72



$$\tan 3.5^\circ = \frac{x}{13+B}$$

$$\tan 9^\circ = \frac{x}{B} \implies B = \frac{x}{\tan 9^\circ}$$

$$\tan 3.5^\circ = \frac{x}{13 + \frac{x}{\tan 9^\circ}} \cdot \frac{\tan 9^\circ}{\tan 9^\circ}$$

$$(13 \tan 9^\circ + x) \tan 3.5^\circ = \frac{x \tan 9^\circ}{13 \tan 9^\circ + x} \cdot (13 \tan 9^\circ + x)$$

$$13 \tan 9^\circ \cdot \tan 3.5^\circ + \tan 3.5^\circ \cdot x = \tan 9^\circ \cdot x - \tan 3.5^\circ \cdot x$$

$$13 \tan 9^\circ \cdot \tan 3.5^\circ = x (\tan 9^\circ - \tan 3.5^\circ)$$

$$\tan 9^\circ - \tan 3.5^\circ$$

$$\tan 9^\circ - \tan 3.5^\circ$$

$$\boxed{1.30 \text{ mi} \approx x}$$