

5.1 Review WS Solutions

$$25.) \theta = \sin^{-1}\left(\frac{3}{4}\right) = \boxed{48.59^\circ}$$

$$26.) \theta = \cos^{-1}\left(\frac{10}{12}\right) = \boxed{33.56^\circ}$$

$$27.) \theta = \cos^{-1}\left(\frac{2}{3}\right) = \boxed{48.19^\circ}$$

$$28.) \theta = \sin^{-1}\left(\frac{144}{200}\right) = \boxed{46.05^\circ}$$

5.1 \rightarrow p. 367-368 #s 81, 85, 101

$$81.) A = \frac{1}{2} r^2 \theta \rightarrow 2 = \frac{1}{2} r^2 \left(\frac{1}{3}\right) \rightarrow 2 = \frac{1}{6} r^2 \rightarrow 6 \cdot 2 = \frac{1}{6} r^2 \cdot 6$$

$$12 = r^2 \rightarrow r = \sqrt{12} = 2\sqrt{3} = \boxed{3.464 \text{ ft}}$$

$$85.) r = 2, \theta = 30^\circ, A = ? \rightarrow A = \frac{1}{2} r^2 \theta \rightarrow A = \frac{1}{2} (2)^2 \left(\frac{30 \cdot \pi}{180}\right)$$

$$A = \frac{\pi}{3} \approx \boxed{1.047 \text{ in}^2}$$

$$101.) \theta = 35^\circ 9' - 29^\circ 57' = 34^\circ 69' - 29^\circ 57' = \underline{5^\circ 12'}$$

$$\text{Arc length} \rightarrow s = r\theta \rightarrow s = 3960 \left(5^\circ 12' \cdot \frac{\pi}{180}\right) \approx \boxed{359 \text{ mi}}$$