

Quiz Unit 3.1-3.5

Name: _____

Keep in exact value unless otherwise stated.

1. Convert the following angles to either radian measure or degrees.

a) $300^\circ = \frac{5\pi}{3} \text{ rad}$

b) $\frac{3\pi}{4} \text{ rad} = 135^\circ$

2. A circle of radius 25 cm has a central angle of 85° . Determine the length of the arc that subtends this angle.

$$\theta = 85^\circ \times \frac{\pi}{180^\circ} = \frac{17\pi}{36}$$

$$\theta = \frac{a}{r}$$

$$a = \theta \cdot r = \frac{17\pi}{36} \cdot 25 = \frac{425\pi}{36} \text{ cm}$$

\therefore the arc length as is ...

3. Determine the exact values for each expression. Use related angle formulas. Show work.

a) $\cos \frac{2\pi}{3}$ Q2

$$= \cos \left(\pi - \frac{\pi}{3} \right) = -\cos \frac{\pi}{3} = -\frac{1}{2}$$

b) $\csc \frac{5\pi}{4}$

$$= \csc \left(\pi + \frac{\pi}{4} \right) = -\csc \frac{\pi}{4} = -\sqrt{2}$$

4. Given that $0 \leq \theta \leq 2\pi$, find θ given the following (show work)

a) $\tan \theta = \sqrt{3}$

$$\theta_r = \tan^{-1}(\sqrt{3}) = \frac{\pi}{3}$$

b) $\sec \theta = \frac{2}{\sqrt{3}}$

Q4 = $2\pi - \frac{\pi}{6} = \frac{11\pi}{6}$

$\theta = \left\{ \frac{\pi}{6}, \frac{11\pi}{6} \right\}$

5. Sketch the graph of $y = -3\cos\left(2x - \frac{\pi}{2}\right)$ for one cycle. State all pertinent information.



