

Complete all problems on page A36 (Extra Practice in the back of the book)

Lesson 6-1 (Pages 343–351)

Change each degree measure to radian measure in terms of π .

1. 120° $\frac{2\pi}{3}$ 2. 280° $\frac{14\pi}{9}$ 3. -440° $-\frac{22\pi}{9}$ 4. -150° $-\frac{5\pi}{6}$

Change each radian measure to degree measure. Round to the nearest tenth.

5. $\frac{8\pi}{3}$ 480° 6. $\frac{5\pi}{12}$ 75° 7. -2 -114.6° 8. 10.5 601.6°

Evaluate each expression.

9. $\sin \frac{5\pi}{6}$ $\frac{1}{2}$ 10. $\sin \frac{4\pi}{3}$ $-\frac{\sqrt{3}}{2}$ 11. $\cos \frac{9\pi}{4}$ $\frac{\sqrt{2}}{2}$ 12. $\cos \left(-\frac{3\pi}{2}\right)$ 0

13. The diameter of a circle is 10 inches. If a central angle measures 80° , find the length of the intercepted arc. **about 7.0 in.**

Lesson 6-2 (Pages 352–358)

Determine each angular displacement in radians.

Round to the nearest tenth.

1. 5 revolutions 2. 3.8 revolutions 3. 14.2 revolutions
31.4 radians 23.9 radians 89.2 radians

Determine each angular velocity. Round to the nearest tenth. **5. 4.7 radians/min**

4. 2.1 revolutions in 5 seconds **2.6 radians/s** 5. 1.5 revolutions in 2 minutes
6. 15.8 revolutions in 18 seconds **5.5 radians/s** 7. 140 revolutions in 20 minutes
44.0 radians/min

8. A children's Ferris wheel rotates one revolution every 30 seconds. What is its angular velocity in radians per second?
about 0.2 radian/s

Lesson 6-3 (Pages 359–366)

Find each value by referring to the graph of the sine or cosine function.

1. $\cos 4\pi$ **1** 2. $\sin 8\pi$ **0**
3. $\sin \frac{3\pi}{2}$ **-1**

Graph each function for the given interval.

4. $y = \sin x, -4\pi \leq x \leq -2\pi$
5. $y = \cos x, -\frac{9\pi}{2} \leq x \leq -\frac{5\pi}{2}$

Lesson 6-4 (Pages 368–377)

State the amplitude and period for each function. Then graph each function.

1. $y = 2 \cos \theta$ **2; 2π** 2. $y = -3 \sin 0.5\theta$ **3; 4π**

3. $y = \frac{1}{2} \cos \frac{\theta}{4}$ **$\frac{1}{2}$; 8π**

Write an equation of the sine function with each amplitude and period.

4. amplitude = 0.5, period = 6π
 $y = \pm 0.5 \sin \frac{\theta}{3}$

5. amplitude = 2, period = $\frac{\pi}{3}$
 $y = \pm 2 \sin 6\theta$

Write an equation of the cosine function with each amplitude and period.

6. amplitude = $\frac{3}{5}$, period = 4π
 $y = \pm \frac{3}{5} \cos \frac{\theta}{2}$

7. amplitude = 0.25, period = 8
 $y = \pm 0.25 \cos \frac{\pi}{4} \theta$