

NAME _____ DATE _____ PERIOD _____

Practice

Angles and Radian Measure

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

1. -250°

2. 6°

3. -145°

4. 870°

5. 18°

6. -820°

Change each radian measure to degree measure. Round to the nearest tenth, if necessary.

7. 4π

8. $\frac{13\pi}{30}$

9. -1

10. $\frac{3\pi}{16}$

11. -2.56

12. $-\frac{7\pi}{9}$

Evaluate each expression.

13. $\tan \frac{\pi}{4}$

14. $\cos \frac{3\pi}{2}$

15. $\sin \frac{3\pi}{2}$

16. $\tan \frac{11\pi}{6}$

17. $\cos \frac{3\pi}{4}$

18. $\sin \frac{5\pi}{3}$

Given the measurement of a central angle, find the length of its intercepted arc in a circle of radius 10 centimeters. Round to the nearest tenth.

19. $\frac{\pi}{6}$

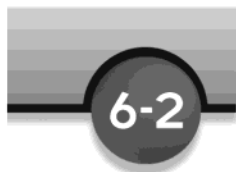
20. $\frac{3\pi}{5}$

21. $\frac{\pi}{2}$

Find the area of each sector, given its central angle θ and the radius of the circle. Round to the nearest tenth.

22. $\theta = \frac{\pi}{6}, r = 14$

23. $\theta = \frac{7\pi}{4}, r = 4$



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Practice

Linear and Angular Velocity

Determine each angular displacement in radians. Round to the nearest tenth.

1. 6 revolutions
2. 4.3 revolutions
3. 85 revolutions
4. 11.5 revolutions
5. 7.7 revolutions
6. 17.8 revolutions

Determine each angular velocity. Round to the nearest tenth.

7. 2.6 revolutions in 6 seconds
8. 7.9 revolutions in 11 seconds
9. 118.3 revolutions in 19 minutes
10. 5.5 revolutions in 4 minutes
11. 22.4 revolutions in 15 seconds
12. 14 revolutions in 2 minutes

Determine the linear velocity of a point rotating at the given angular velocity at a distance r from the center of the rotating object. Round to the nearest tenth.

13. $\omega = 14.3$ radians per second, $r = 7$ centimeters
14. $\omega = 28$ radians per second, $r = 2$ feet
15. $\omega = 5.4\pi$ radians per minute, $r = 1.3$ meters
16. $\omega = 41.7\pi$ radians per second, $r = 18$ inches
17. $\omega = 234$ radians per minute, $r = 31$ inches
18. **Clocks** Suppose the second hand on a clock is 3 inches long. Find the linear velocity of the tip of the second hand.

