6-2

NAME _____ DATE _____ PERIOD _____

Practice

Linear and Angular Velocity

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

1. 6 revolutions
37.7 radians

2. 4.3 revolutions
27.0 radians

3. 85 revolutions
534.1 radians

4. 11.5 revolutions
72.3 radians

5. 7.7 revolutions
48.4 radians

6. 17.8 revolutions
111.8 radians

Determine each angular velocity. Round to the nearest tenth.

7. 2.6 revolutions in 6 seconds
2.7 radians/s

8. 7.9 revolutions in 11 seconds
4.5 radians/s

9. 118.3 revolutions in 19 minutes
39.1 radians/min

10. 5.5 revolutions in 4 minutes
8.6 radians/min

11. 22.4 revolutions in 15 seconds
9.4 radians/s

12. 14 revolutions in 2 minutes
44.0 radians/min

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. ω = 14.3 radians per second, r = 7 centimeters
100.1 cm/s

14. ω = 28 radians per second, r = 2 feet
56.0 ft/s

15. $\omega = 5.4\pi$ radians per minute, r = 1.3 meters
22.1 m/min

16. $\omega = 41.7\pi$ radians per second, r = 18 inches
2358.1 in./s

17. ω = 234 radians per minute, r = 31 inches
7254.0 in./min

18. ***Clocks*** Suppose the second hand on a clock is 3 inches long. Find the linear velocity of the tip of the second hand.
0.3 in./s

6-2

Angul

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Angular ac
respect to t

At time t =
time t, the
acceleratio

The units f

Example

Solve.

1. The rec
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the chip
1050 r

2. When a
angular
velocity
circle wi
car trav
angular
0.37 ft