

## 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.