

Name :

Date :

Hour :

Practice Problems Acceleration

1. While traveling along a highway a driver slows from 24 m/s to 15 m/s in 12 seconds. What is the automobile's acceleration? (Remember that a negative value indicates a slowing down or deceleration.)
2. A parachute on a racing dragster opens and changes the speed of the car from 85 m/s to 45 m/s in a period of 4.5 seconds. What is the acceleration of the dragster?
3. The table below includes data for a ball rolling down a hill. Fill in the missing data values in the table and determine the acceleration of the rolling ball.

Time (seconds)	Speed (km/h)
0 (start)	0 (start)
2	3
4	6
6	9
8	12
10	15

Acceleration = _____

4. A car traveling at a speed of 30.0 m/s encounters an emergency and comes to a complete stop. How much time will it take for the car to stop if it decelerates at -4.0 m/s^2 ?
5. If a car can go from 0 to 60 mi/hr in 8.0 seconds, what would be its final speed after 5.0 seconds if its starting speed were 50 mi/hr?
6. A cart rolling down an incline for 5.0 seconds has an acceleration of 4.0 m/s^2 . If the cart has a beginning speed of 2.0 m/s, what is its final speed?

7. A helicopter's speed increases from 25 m/s to 60 m/s in 5 seconds. What is the acceleration of this helicopter?

8. As she climbs a hill, a cyclist slows down from 25 mi/hr to 6 mi/hr in 10 seconds. What is her deceleration?

9. A motorcycle traveling at 25 m/s accelerates at a rate of 7.0 m/s^2 for 6.0 seconds. What is the final speed of the motorcycle?

10. A car starting from rest accelerates at a rate of 8.0 m/s/s . What is its final speed at the end of 4.0 seconds?

11. After traveling for 6.0 seconds, a runner reaches a speed of 10 m/s. What is the runner's acceleration?

12. A cyclist accelerates at a rate of 7.0 m/s^2 . How long will it take the cyclist to reach a speed of 18 m/s?

13. A skateboarder traveling at 7.0 meters per second rolls to a stop at the top of a ramp in 3.0 seconds. What is the skateboarder's acceleration?