

Name _____ Date _____
Teacher _____ Period _____

Displacement, Velocity, and Acceleration Worksheet

1. While John is traveling along a straight interstate highway, he notices that the mile marker reads 260. John travels until he reaches the 150-mile marker and then retraces his path to the 175-mile marker. What is John's displacement from the 260-mile marker?
2. A physics book is moved once around the perimeter of a table of dimensions 1.0 m by 2.0 m.
 - a. If the book ends up in its initial position, what is its displacement?
 - b. What is the distance traveled?
3. Light from the sun reaches the Earth in 8.3 minutes. The velocity of light is 3.00×10^8 m/s. How far from Earth is the sun?
4. You and your friend each drive 50.0 km. You travel at 90.0 km/h. Your friend travels at 95 km/h. How long will your friend be waiting for you at the end of the trip?
5. Ann is driving down a street at 55 km/h. Suddenly a child runs into the street. If it takes Ann 0.75 seconds to react and apply the brakes, how many meters will she have moved before she begins to slow down? If she slows down at a rate of 1.5 m/s^2 , how long will it take her to stop?
6. You drive your car for 2.0 h at 40.0 km/h, then for 2.0 h at 60.0 km/h. What is your average velocity?

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7. When a bus comes to a sudden stop to avoid hitting a dog, it slows from 9.00 m/s to 0.00 m/s in 1.50 seconds. Find the average acceleration of the bus.
8. A car traveling initially at 7.0 m/s accelerates to velocity of 12.0 m/s in 2.0 s. What is the average acceleration of the car?
9. With an average acceleration of 0.50 m/s^2 , how long will it take a cyclist starting from rest to reach 13.5 m/s?
10. A car accelerates uniformly from rest to 6.6 m/s in 6.5 seconds. Find the distance the car traveled during this time.
11. When Maggie applies the brakes of her car, the car slows uniformly from 15.00 m/s to 0.00 m/s in 2.50 s. How many meters before a stop sign must she apply her brakes?
12. A car enters a freeway with a speed of 6.5 m/s and accelerates to a speed of 24 m/s in 3.5 min. How far does the car travel while it is accelerating?
13. A car traveling at 7.0 m/s accelerates at the rate of 0.80 m/s^2 for 2.0 s. What is the final velocity of the car?
14. A snowmobile has an initial velocity of 3.0 m/s.
 - a. If it accelerates at a rate of 0.50 m/s^2 for 7.0 seconds, what is the final velocity?
 - b. If it slows down at a rate of 0.60 m/s^2 , how long will it take to come to a complete stop?

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