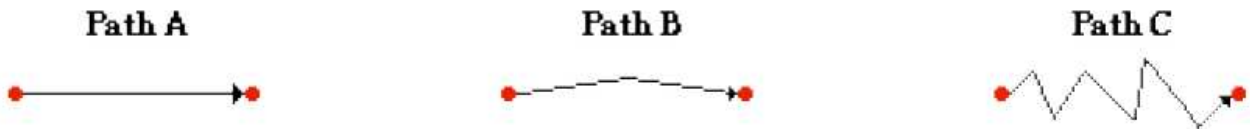


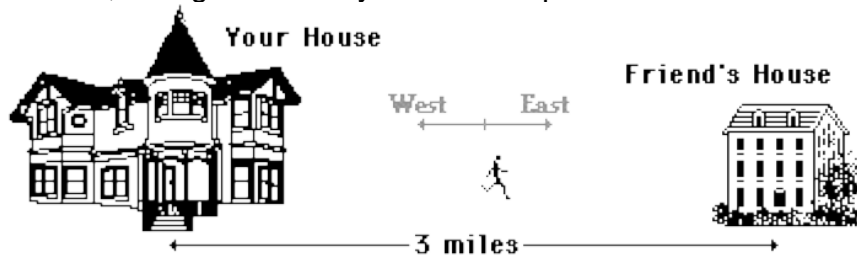
Name _____ Date _____
 Teacher _____ Period _____

Displacement, Velocity, and Acceleration Worksheet

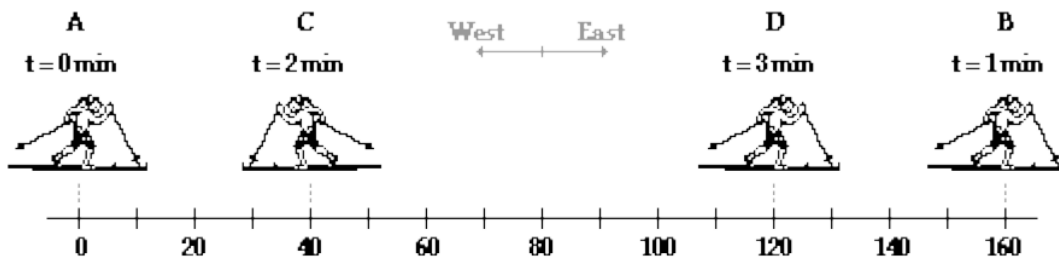
1. Suppose you are considering three different paths (A, B, and C) between the same two locations. Along which path would you have to move with the greatest speed to arrive at the destination in the same amount of time?



2. You run from your house to a friend's house that is 3 miles away in 30 minutes. You then immediately walk home, taking 1 hour on your return trip.



- a. What was the average speed (in mi/hr) for the entire trip? _____
- b. What was the average velocity (in mi/hr) for the entire trip? _____
3. A cross-country skier moves from location A to location B to location C to location D. Each leg of the back-and-forth motion takes 1 minute to complete; the total time is 3 minutes. The unit of length is meters.



- a. Calculate the average speed (in m/s) and the average velocity (in m/s) of the skier during the three minutes of recreation.
- b. Calculate the average velocity (in m/s) of the skier during the second minute (from 1 to 2 minutes).

4. A mouse runs across a 4.56 m kitchen floor in 3.42 seconds. What is the velocity of the mouse?

5. 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?

6. 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?

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. 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?

9. 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 instead, it slows down at a rate of 0.60 m/s^2 , how long will it take to come to a complete stop?