

Name: _____

Block: ____ Date: _____

Unit 1: Motion
Test Review

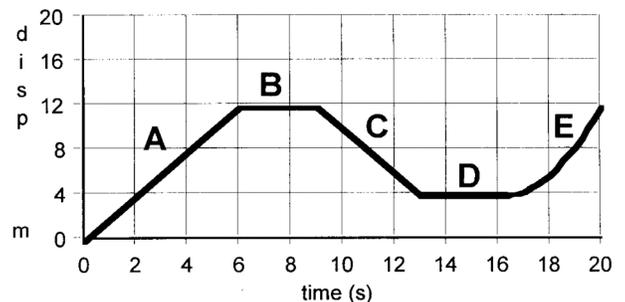
1. Which of the following quantities are vectors? Circle all that apply.
- | | |
|-----------------|----------------|
| a. Speed | h. Temperature |
| b. Displacement | i. Mass |
| c. Distance | j. 477 ft |
| d. Force | k. 35 m north |
| e. Time | l. 22 mph |
| f. Velocity | m. 23 km/min |
| g. Acceleration | n. 3 cm/s left |

What do all vectors have in common?

2. A runner jogs 18 blocks north then 6 blocks west. It takes her 16 minutes to do this.
- What distance did the runner jog?
 - What is the runner's final displacement?
 - What is the runner's average speed?
 - What is the runner's average velocity?
 - Draw the vectors that represent her run as well as the final resultant vector.

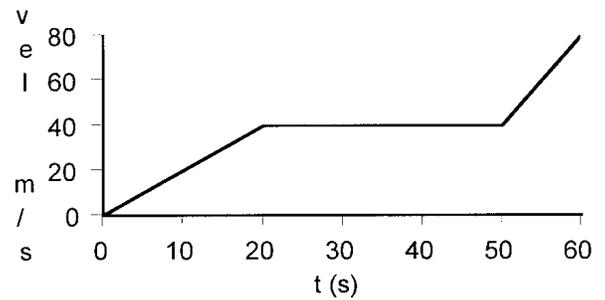
3. The questions below refer to the position graph of a car on the right:

- When is the car at rest?
- When is the car heading back to its starting position?
- What is the average velocity of the car during segment A?
- What is the final displacement of the car?
- What is the total distance traveled by the car?



4. The questions below refer to the velocity graph of a skier on the right:

- a. At what time does the skier have its greatest velocity?
- b. When is the skier stationary?
- c. What is the average acceleration of the skier from 0 to 20 seconds?
- d. How far does the skier travel from 20 to 30 seconds?
- e. How far does the skier travel from 0 to 20 seconds?



5. A plane uniformly increases its velocity from 180 m/s to 220 m/s in 20 seconds.

- a. What is the average velocity of the plane during this time?
- b. What is the acceleration of the plane?
- c. How far does the plane travel during the 20-second period?

6. A runner starts from rest and accelerates uniformly. He covers 25 m in the first 10 seconds.

- a. What is his acceleration?
- b. What is his final velocity?

7. Sketch a position graph, velocity graph, and acceleration graph for the two motions described below. All three graphs should have time as the independent variable.

- a. An object walks in the positive direction at a constant speed.
- b. A marble starts from rest and rolls down a ramp. The marble gains speed at a constant rate.