

## Chapter 11 Motion

**Section 11.1 Distance and Displacement****(pages 328–331)**

*This section defines distance and displacement. It presents methods of describing motion and introduces vector addition and subtraction.*

**Reading Strategy (page 328)**

**Predicting** Write a definition for *frame of reference* in your own words in the left column of the table. After you read the section, compare your definition to the scientific definition and write a correct definition. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

Frame of Reference	
Frame of reference probably means	Frame of reference actually means
Sample answer: The range of distances or area that you are considering in a problem	A system of objects that are not moving with respect to one another

**Choosing a Frame of Reference (pages 328–329)**

- Is the following sentence true or false? A frame of reference is not necessary to describe motion accurately and completely.           false
- Movement in relation to a frame of reference is called \_\_\_\_\_.  
Circle the correct answer.  
distance      motion      relative motion
- Imagine that you are a passenger in a car. Circle the letter of the best frame of reference you could use to determine how fast the car is moving relative to the ground.
  - the people sitting next to you in the backseat
  - a van traveling in the lane next to your car
  - c. a signpost on the side of the road

**Measuring Distance (page 329)**

- Define distance. Distance is the length of a path between two points.
- Circle the letter of the SI unit best suited for measuring the length of a room in your home.
  - kilometers
  - b. meters
  - centimeters

**Chapter 11 Motion**

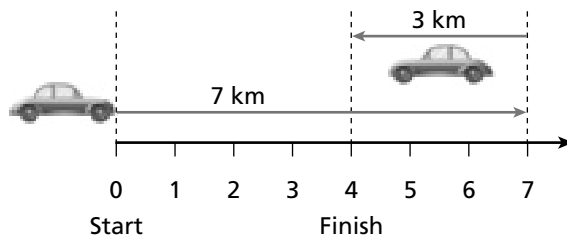
**Measuring Displacements (page 330)**

6. Is the following sentence true or false? Five blocks south is an example of a displacement. true
7. What would your total displacement be if you walked from your front door, around the block, and then stopped when you reached your front door again? Circle the letter of the correct answer.
  - a. one block
  - b. zero**
  - c. the entire distance of your trip

**Combining Displacements (pages 330–331)**

8. A vector is a quantity that has both \_\_\_\_\_ and \_\_\_\_\_. Circle the best answer(s).  
 direction      speed       magnitude
9. Circle the letter of each answer that could describe the magnitude of a vector.
  - a. length**
  - b. direction
  - c. amount**

For questions 10 and 11, refer to the figure below.



10. The magnitudes of the two displacement vectors are 7 km and 3 km.
11. Because the two displacements are in opposite directions, the magnitude of the total displacement is 4 km.
12. The vector sum of two or more other vectors is called the \_\_\_\_\_. Circle the correct answer.  
 added vector      displacement vector       resultant vector