

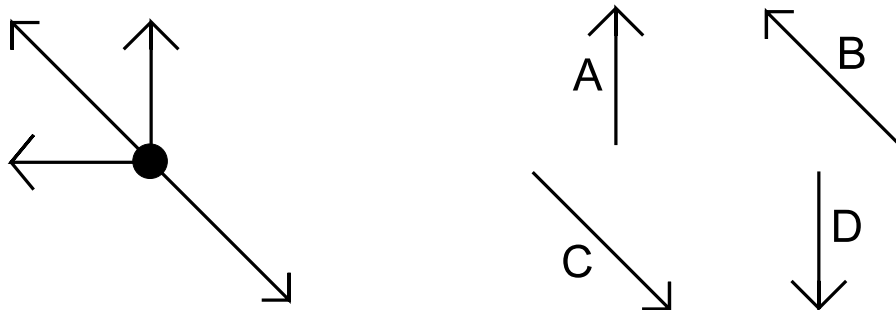
**INQUIRY PHYSICS TEST REVIEW II**  
**Units 1-4: One and Two-dimensional Motion**

Name \_\_\_\_\_

In the space to the left, write the letter of the best answer to each question. Assume air resistance is negligible throughout. **Answers to questions 1-8 are at the bottom.**

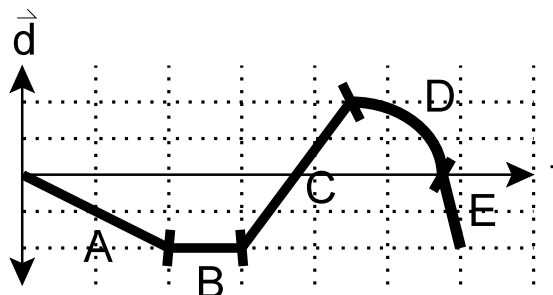
- \_\_\_\_\_ 1. An object is observed and a graph of its distance versus time is constructed. The graph has a slope of +5.00 when the distance is measured in meters and the time is measured in seconds. The object was...
- moving at a constant speed of 5.00 m/s.
  - motionless.
  - decelerating.
  - accelerating at 5.00 m/s<sup>2</sup>.

- \_\_\_\_\_ 2. Four force vectors act simultaneously on a body as shown below. What is the resultant force?



- \_\_\_\_\_ 3. The velocity (in m/s) vs. time (in s) graph of an object's motion has a slope of +2. What does this indicate?
- The object will travel 2 meters each second.
  - The object is accelerating at 2 m/s<sup>2</sup>.
  - The object's velocity is dropping by 2 m/s each second.
  - The object is rising at 2 m/s.

Questions 4 through 8 refer to the lettered sections of the graph at right. An object's **displacement** as it moved backward and forward from its starting position of zero is shown. (A section can be the answer to more than one question.)



- \_\_\_\_\_ 4. During which section did the object have the largest constant speed?
- \_\_\_\_\_ 5. During which section was the object always accelerating?
- \_\_\_\_\_ 6. During which section was the object always moving toward its starting position?
- \_\_\_\_\_ 7. During which section was the object moving forward at a constant speed?
- \_\_\_\_\_ 8. During which section was the object at rest?

Answers to 1-8:
1.
2.
3.
4.
5.
6.
7.
8.

A  
B  
B  
E  
D  
D  
C  
B

9. A skier leaves the line at 3.00 m/sec downhill and accelerates uniformly at  $1.25 \text{ m/s}^2$  in the same direction. How fast will the skier be moving after having gone 500 m? *35.5 m/s*
10. Firemen are practicing rescue operations in which people would have to jump from tall buildings into a net. For this training exercise, a person hurls **downward** from a fire escape at 5.00 m/s and falls to a net 28.4 m below the fire escape.
- a. What will be the velocity of the person at the instant he or she hits the net? *24.1 m/s down*
- b. How long will it take for the person to fall to the level of the net? *1.95 s*
- c. How long after jumping would the person reach a velocity of 9.8 m/s downward? *0.490 s*
11. A bullet traveling 800.0 m/s horizontally hits a tree some distance away. If the bullet fell 0.100 m before it struck the tree, how far away was that tree? *114 m*
12. A diver ran horizontally off the edge of a sheer cliff at 4.4 m/s. If the diver hit the water exactly 8.00 m from the base of the cliff, how high was that cliff? *16.2 m*