**1** A golf ball is hit with an initial velocity of 15 meters per second at an angle of 35 degrees above the horizontal. What is the vertical component of the golf ball's initial velocity?

(1) 8.6 m/s   (3) 12 m/s
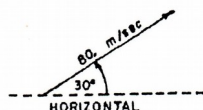(2) 9.8 m/s   (4) 15 m/s

2 An object is displaced 3 meters to the west and then 4 meters to the south.

Which vector shown below best represents the resultant displacement of the block?

(1) 37°   (3) 37°
(2) 55°   (4) 55°
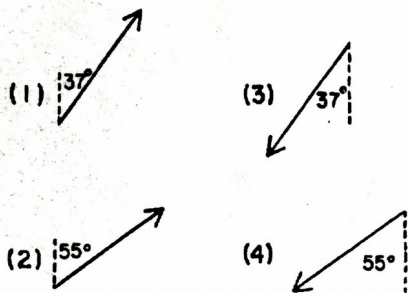
3 What is the magnitude of the vertical component of the velocity vector shown below?

(1) 10. m/sec   (3) 30. m/sec
(2) 69 m/sec   (4) 40. m/sec

4 What is the total displacement of a student who walks 3 blocks east, 2 blocks north, 1 block west, and then 2 blocks south?

(1) 0   (3) 2 blocks west
(2) 2 blocks east   (4) 8 blocks

5 Which quantity has both magnitude and direction?
1 distance   3 mass
2 speed   4 velocity

6 Velocity is to speed as displacement is to

(1) acceleration   (3) momentum
(2) time   (4) distance

7 Which vector below represents the resultant of the two displacement vectors shown at the right?

(1)   (2)   (3)   (4)

8 A student walks 40. meters along a hallway that heads due north, then turns and walks 30. meters along another hallway that heads due east. What is the magnitude of the student's resultant displacement?
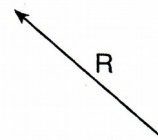
(1) 10. m   (3) 50. m
(2) 35 m   (4) 70. m

9 Which terms both represent scalar quantities?

(1) displacement and velocity
(2) distance and speed
(3) displacement and speed
(4) distance and velocity

10 If a woman runs 100 meters north and then 70 meters south, her total displacement will be

(1) 30 m north   (3) 170 m north
(2) 30 m south   (4) 170 m south

11 The diagram below shows a resultant vector, R.

Which diagram best represents a pair of component vectors, A and B, that would combine to form resultant vector R?

(1)   (2)   (3)   (4)