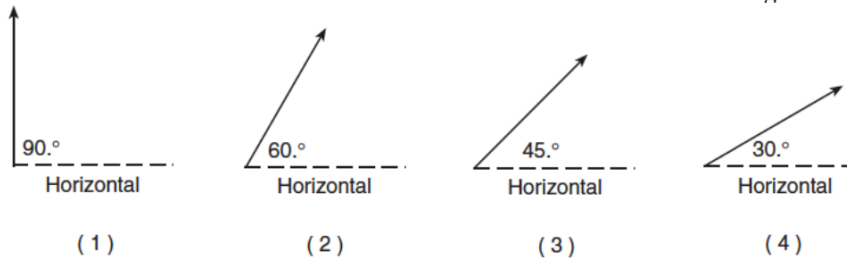


1.

1. A volleyball hit into the air has an initial speed of 10 meters per second. Which vector best represents the angle above the horizontal that the ball should be hit to remain in the air for the greatest amount of time?



Base your answers to questions 2 through 4 on the information below.

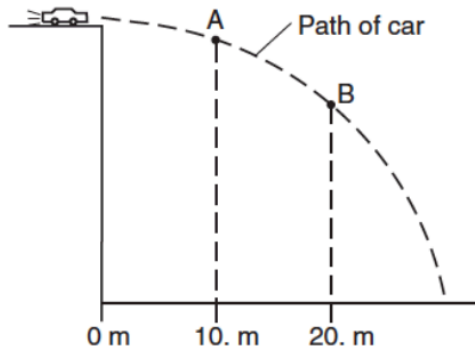
A projectile is fired from the ground with an initial velocity of 250 meters per second at an angle of 60° above the horizontal.

2. On the diagram at right, use a protractor and ruler to draw a vector to represent the initial velocity of the projectile. Begin the vector at P, and use a scale of 1.0 centimeter = 50 meters per second.
3. Determine the horizontal component of the initial velocity.



4. Explain why the projectile has no acceleration in the horizontal direction. [Neglect friction.]

6. The diagram below represents the path of a stunt car that is driven off a cliff, neglecting friction.



Compared to the horizontal component of the car's velocity at point A, the horizontal component of the car's velocity at point B is

1. smaller
2. greater
3. the same