

1. A ball is thrown straight up in the air. Neglect air resistance. While the ball is in the air its acceleration
- (a) increases
 - (b) is zero
 - (c) remains constant
 - (d) changes direction
 - (e) decreases on the way up and increases on the way down

The acceleration is always g downwards. **Correct answer is (c)**

2. You drive west at 20 km/h for one hour, then drive east at 15 km/h for one hour. Your net displacement is
- (a) 5 km east
 - (b) 35 km west
 - (c) 35 km east
 - (d) 5 km west

Correct answer is (d)

3. A runner moves along a circular track at constant speed
- (a) Her acceleration is 0
 - (b) Her velocity is constant
 - (c) Both (a) and (b) are true
 - (d) Her acceleration and velocity are changing

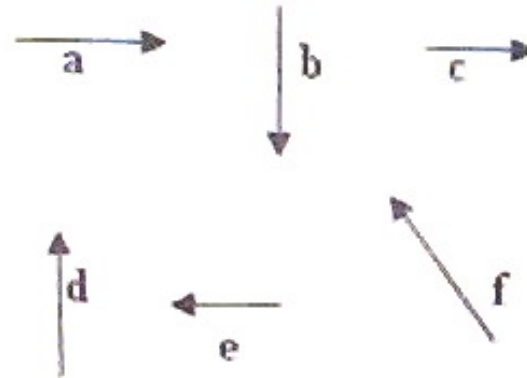
Correct answer is (d). See book, figure 3-23. Remember that acceleration and velocity are vectors.

1. Force is a vector quantity measured in units of Newtons, N. What must be the angle between two concurrently acting forces of 5 N and 3 N respectively if the resultant vector is 8 N?
- (a) 0° (b) 45° (c) 90° (d) 180°

The only way for the magnitude of the resulting force is to be the sum of the magnitudes of the original forces is for the two forces to point in the same direction. Correct answer is (a)

5. Six vectors, **a** through **f** have the magnitudes and directions indicated in the figure. Which of the following statements is true?

- (a) $\mathbf{b} + \mathbf{e} = \mathbf{f}$
(b) $\mathbf{b} + \mathbf{c} = \mathbf{f}$
(c) $\mathbf{d} + \mathbf{c} = \mathbf{f}$
(d) $\mathbf{d} + \mathbf{e} = \mathbf{f}$
(e) $\mathbf{a} + \mathbf{b} = \mathbf{f}$



Correct answer is (d)