

## Answer on Question #48672, Physics, Mechanics | Kinematics | Dynamics

The Position ( $x$ ) of a particle moving along a straight line as a function of time ( $t$ ) is given by  $x=6+4t-t^2$ . The distance covered by the particle in  $t=0$  to  $t=3$ sec is ..

A) 9m. B) 3m. C) 5m. D) 6m

**Solution:**

$$x = 6 + 4t - t^2$$

The position of particle at  $t=0$  is

$$x(0) = 6 \text{ m}$$

The position of particle at  $t=3$  is

$$x(3) = 6 + 4 * 3 - 3^2 = 9 \text{ m}$$

The distance covered is

$$d = x(3) - x(0) = 9 - 6 = 3 \text{ m}$$

**Answer:** B) 3m.