

A particle starts moving with speed 3m/s and accelerates for 5 seconds with acceleration 2m/s<sup>2</sup>. Find the displacement of the particle?

**Solution**

Let's find the displacement of the particle  $d$  using the formula for displacement:

$$d = v_0 t + \frac{at^2}{2},$$

where  $v_0$  – the initial speed of the particle,  $t$  – time and  $a$  – the acceleration.

$$d = 3 * 5 + 2 * \frac{5^2}{2} = 40 \text{ m}.$$

**Answer: 40 m.**