

9D Final Three SUVAT Equations

1. A particle is moving in a straight line from A to B with constant acceleration 5ms^{-2} . The velocity of the particle at A is 3ms^{-1} in the direction AB. The velocity at B is 18ms^{-1} in the same direction. Find the distance from A to B.

2. A particle is moving in a straight horizontal line with constant deceleration 4ms^{-2} . At time $t = 0$ the particle passes through a point O with speed 13ms^{-1} , travelling to a point A where $OA = 20\text{m}$. Find:

a) The times when the particle passes through A

b) The total time the particle is beyond A

c) The time taken for the particle to return to O

3. A particle is travelling along the x-axis with constant deceleration 2.5ms^{-2} . At time $t = 0$, the particle passes through the origin, moving in the positive direction with speed 15ms^{-1} . Calculate the distance travelled by the particle by the time it returns to the origin.