

### PROBLEMS

1. A particle of mass  $m$  moves in a straight line with constant acceleration  $a$ . It starts from rest at the origin  $O$  at time  $t = 0$ . Find the distance travelled in time  $t$ .

2. A particle starts from rest at the origin  $O$  and moves in a straight line with constant acceleration  $a$ . It passes through a point  $P$  at time  $t_1$  and a point  $Q$  at time  $t_2$ . Find the distance between  $P$  and  $Q$ .

3. A particle starts from rest at the origin  $O$  and moves in a straight line with constant acceleration  $a$ . It passes through a point  $P$  at time  $t_1$  and a point  $Q$  at time  $t_2$ . Find the time taken for the particle to travel from  $P$  to  $Q$ .

4. A particle starts from rest at the origin  $O$  and moves in a straight line with constant acceleration  $a$ . It passes through a point  $P$  at time  $t_1$  and a point  $Q$  at time  $t_2$ . Find the distance between  $P$  and  $Q$ .

5. A particle starts from rest at the origin  $O$  and moves in a straight line with constant acceleration  $a$ . It passes through a point  $P$  at time  $t_1$  and a point  $Q$  at time  $t_2$ . Find the time taken for the particle to travel from  $P$  to  $Q$ .

| Time $t$ | Distance $s$        | Velocity $v$ |
|----------|---------------------|--------------|
| 0        | 0                   | 0            |
| $t_1$    | $\frac{1}{2}at_1^2$ | $at_1$       |
| $t_2$    | $\frac{1}{2}at_2^2$ | $at_2$       |

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