1. Which of the following graph represents the uniform motion?
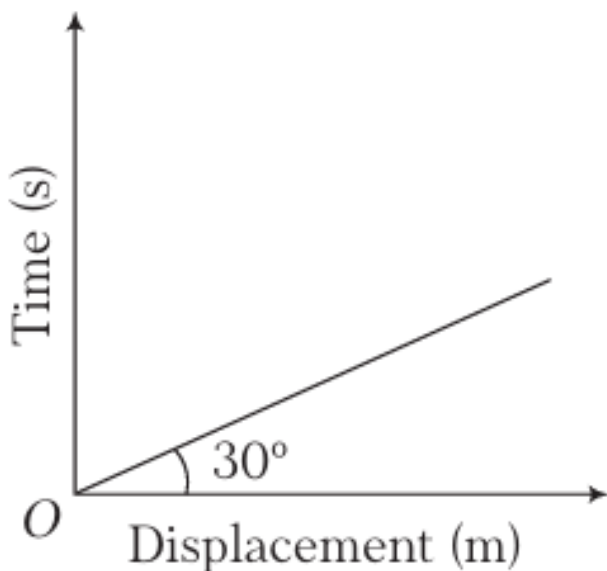
(a)

(b)

(c)

(d) None of these
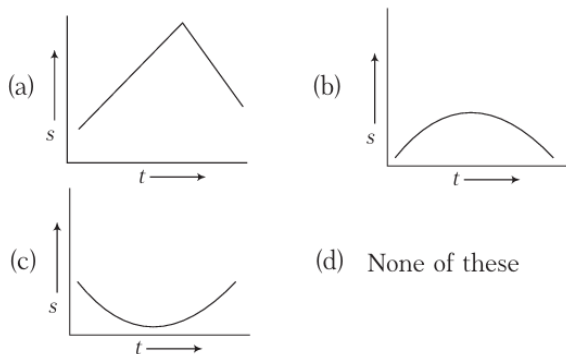
2. A particle shows distance-time curve as given in this figure. The maximum instantaneous velocity of the particle is around the point.
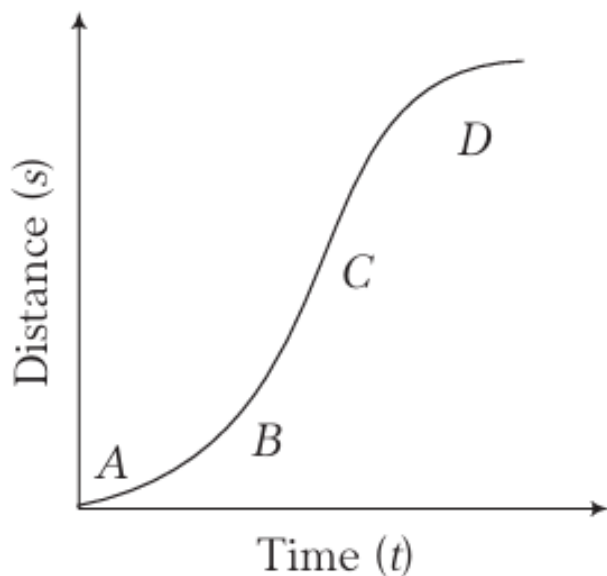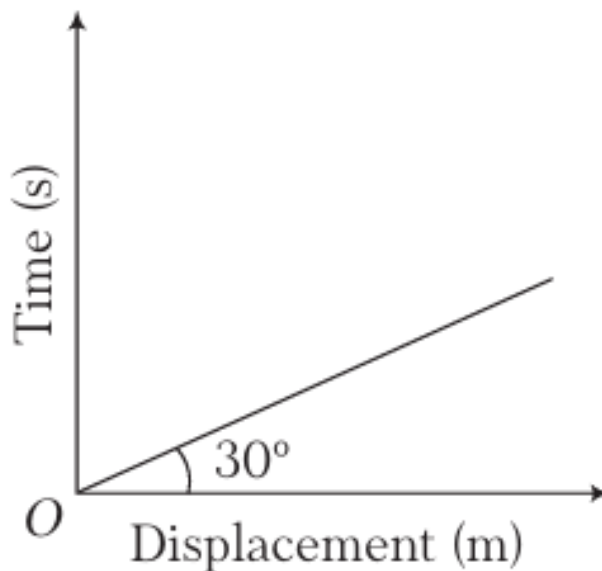

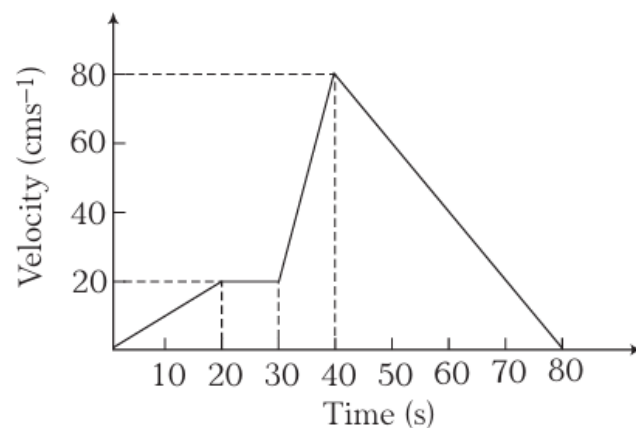(a) A   (b) B   (c) C   (d) D

3. From the displacement-time graph, find out the velocity of a moving body.

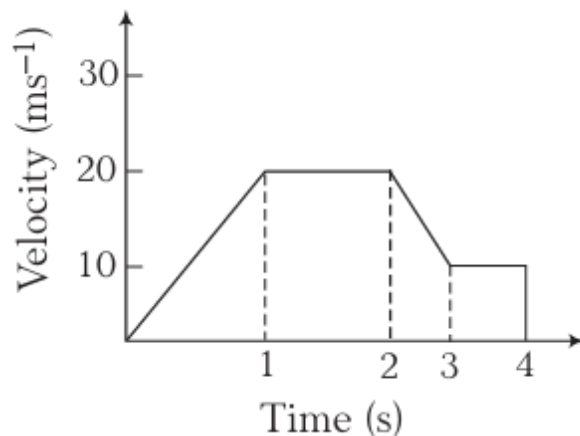4. From the displacement-time graph, find out the velocity of a moving body.

5. The v-t graph of a moving object is shown in the figure. The maximum acceleration is

(a) $1 \,\text{cm/s}^2$ (b) $2 \,\text{cm/s}^2$ (c) $3 \,\text{cm/s}^2$ (d) $6 \,\text{cm/s}^2$
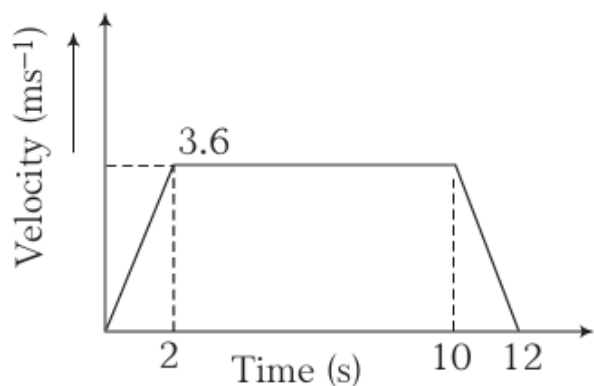
6. The variation of velocity of a particle with time moving along a straight line is illustrated in the adjoining figure. The distance travelled by the particle in $4\,\text{s}$ is:

(a) $60\,\text{m}$ (b) $55\,\text{m}$ (c) $25\,\text{m}$ (d) $30\,\text{m}$

7. A lift is going up. The variation in the speed of the lift

is as given in the graph. What is the height to which the lift takes the passengers?

(a) 3.6 m   (b) 28.8 m   (c) 36.0 m   (d) Cannot be calculated from the above graph

8. The velocity-time graph of a body moving in a straight line is shown in the figure. The displacement and distance travelled by the body in 6 s are respectively
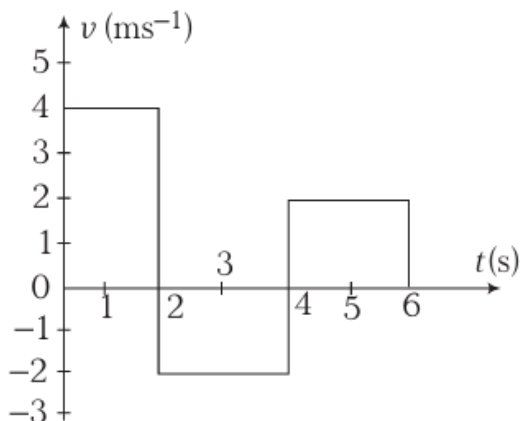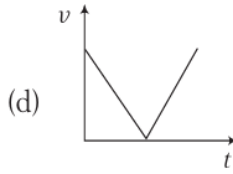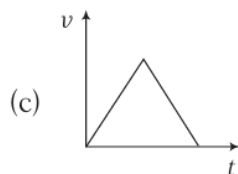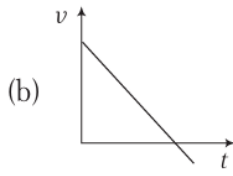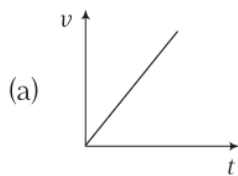

(a) 8 m, 16 m   (b) 16 m, 8 m   (c) 16 m, 16 m   (d) 8 m, 18 m

9. The x-t equation is given as $x(t) = 2t + 1$. The corresponding v-t graph is

(a) a straight line passing through origin   (b) a straight line not passing through origin   (c) a parabola   (d) None of the above
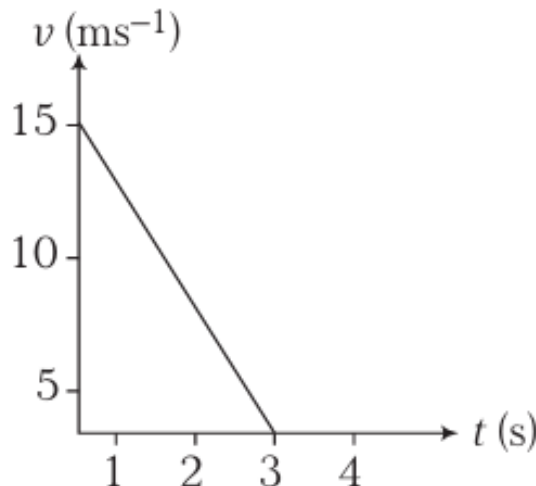
10. Which of the following graphs correctly represents velocity-time relationship for a particle released from rest to fall freely under gravity?

11. A particle projected vertically upwards returns to the ground in time T. Which graph represents the correct variation of velocity v against time t?
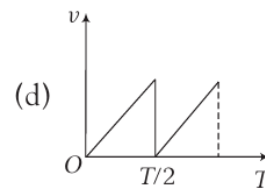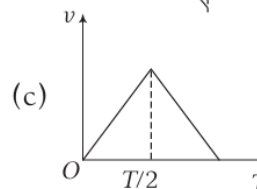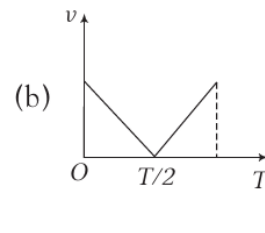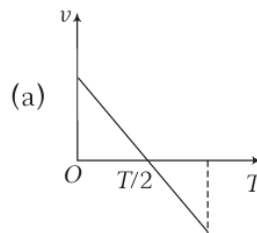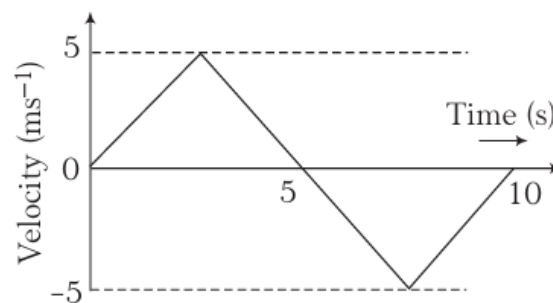

12. The velocity-time graph is shown in the figure, for a particle. The acceleration of particle is:
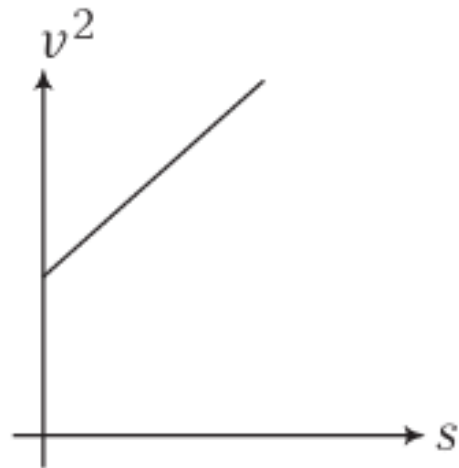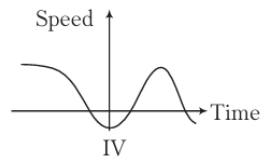

(a) $2.25 \,\mathrm{m/s^2}$ (b) $5 \,\mathrm{m/s^2}$ (c) $-5 \,\mathrm{m/s^2}$ (d) $-3 \,\mathrm{m/s^2}$

13. The v-t plot of a moving object is shown in the figure. The average velocity of the object during the first 10 s is
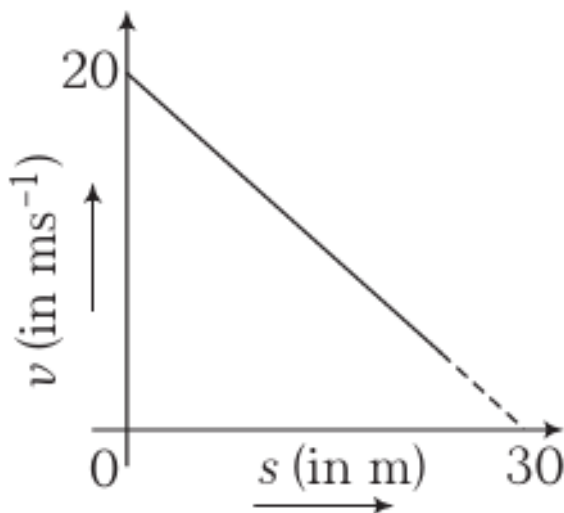

(a) zero   (b) 2.5 m/s   (c) 5 m/s   (d) 2 m/s

14. Which of the following graphs cannot possibly represent one dimensional motion of a particle?
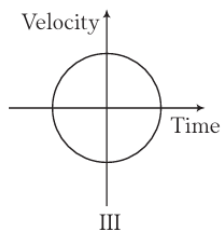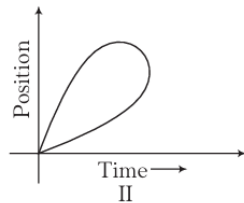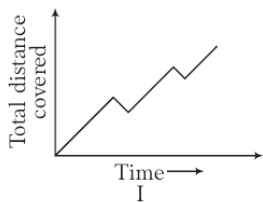
(a) I and II   (b) II and III   (c) II and IV   (d) All of these

(a) The given graph shows a uniformly accelerated motion.   (b) Initial velocity of particle is zero.   (c) Corresponding s-t graph will be a parabola.   (d) None of the above

15. If the velocity v of a particle moving along a straight line decreases linearly with its displacement s from $20\,\text{m/s}$ to a value approaching zero at $s = 30\,\text{m}$, then acceleration of the particle at $v = 10\,\text{m/s}$ is:

17. A graph between the square of the velocity of a particle and the distance s moved by the particle is shown in the figure below. The acceleration of the particle is:

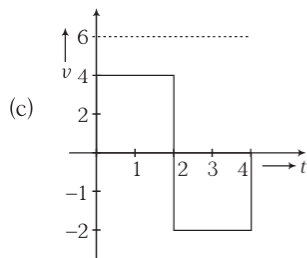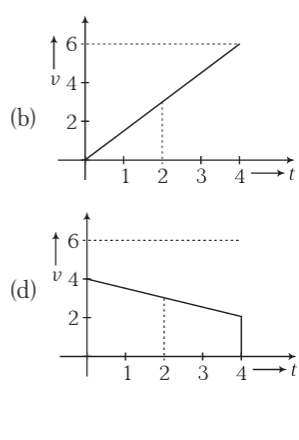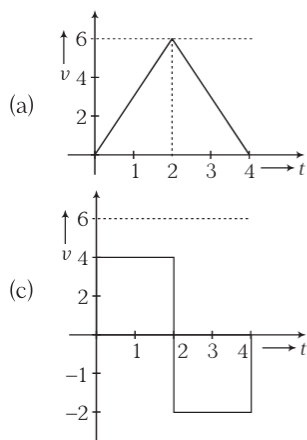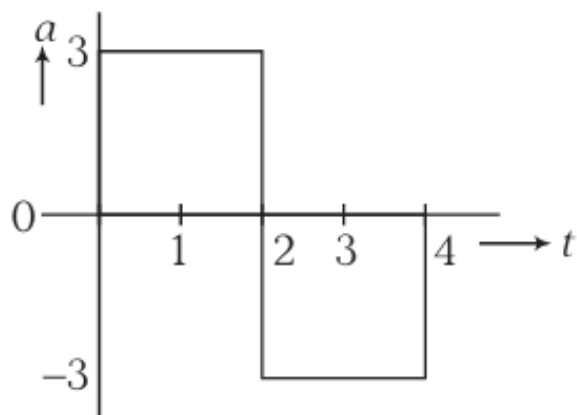(a) $\frac{2}{3}\,\text{m/s}^2$ (b) $-\frac{2}{3}\,\text{m/s}^2$ (c) $\frac{20}{3}\,\text{m/s}^2$ (d) $-\frac{20}{3}\,\text{m/s}^2$
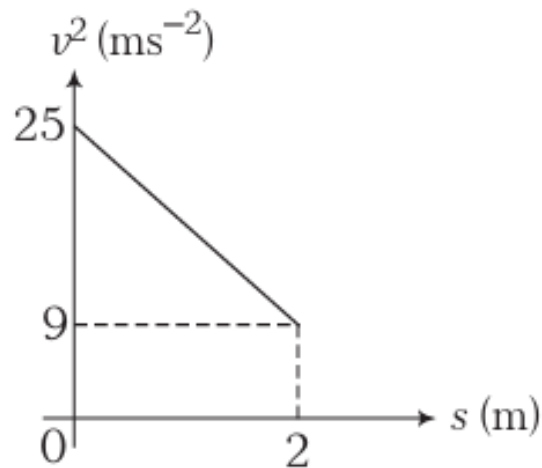
(a) $-8\,\text{m/s}^2$ (b) $-4\,\text{m/s}^2$ (c) $-16\,\text{m/s}^2$ (d) None of these

16. v^2 versus s graph of a particle moving in a straight line is shown in the figure below. From the graph some conclusions are drawn. State which amongst the following statement(s) is wrong?

18. A particle starts from rest at $t = 0$ and undergoes an acceleration a in m/s^2 with time t in second which is as shown?
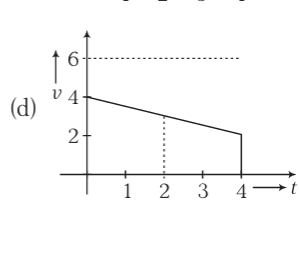
Key

Which one of the following plot represents velocity v (in m/s) versus time t (in s)?

1.(d) 2.(c) 3.(c) 4.(a) 5.(d) 6.(b) 7.(c) 8.(a) 9.(b) 10.(a)
11.(a) 12.(c) 13.(a) 14.(d) 15.(d) 16.(b) 17.(b) 18.(a)