PHYSICS

BOOKS - MAXIMUM PUBLICATION

EQUATIONS OF MOTION

Example

1. Draw position -Time graph . What is the nature of the graph?

X- axis, time (s)	0	1	2	3
Y- axis, position (m)	0	1	2	3

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2. Using the data given bilow , draw a position-time graph

Time (s)	0	1	2	3	4	5	6
Position (m)	0	2	4	6	8	10	12

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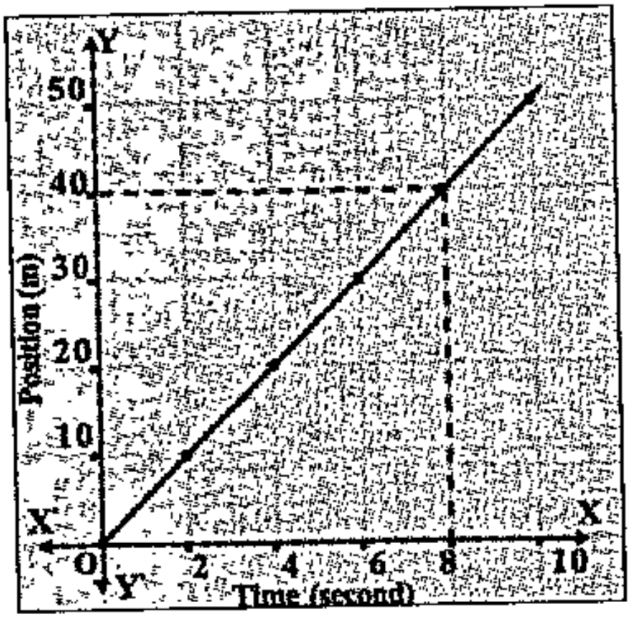
3. The position-time graph reading the motion of a car is given . Find out from the graph the distance travelled by the car in 8s.



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4. The velocity of a body starting from rest is 20m/s in the 4th second and 40m/s in the 8th second. What is the distance travelled by the body between the 4th and 8th second?

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5. A car come to rest when brake was applied for 4s to get a retardation of $3\frac{m}{s^2}$ .Calculate how far the car would have travelled after applying the brake.

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6. If the velocity of a car moving with uniform velocity changes from 20m/s to 40m/s in 5s What is the acceleration of the car?

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7. If the velocity of a car moving with uniform velocity changes from 20m/s to 40m/s in 5s What is the displacement by the car during this time interval?

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8. If the velocity of a train starting from rest becomes 72km/h in 10minute.

What is the acceleration?

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9. If the velocity of a train starting from rest becomes 72km/h in 10minute.

Calculate the distance travelled by the train within this time interval.

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10. An object starting from rest travels with an acceleration of $5\frac{m}{s^2}$. What will be its velocity after 3s?

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11. Draw position -Time graph .

Time (s)	0	3	6	9	12	15	18
Position (m)	0	5	10	15	20	25	30

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12. Draw speed -Time graph .

Time (s)	0	2	4	6	8	10
Speed (m/s)	10	15	20	20	20	15

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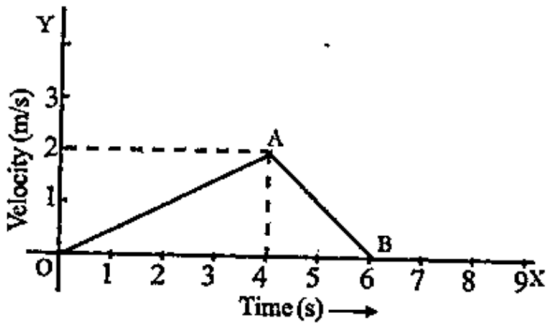
13. Examine the graph and answer the following question.

Is the motion of the object is uniform/non uniform



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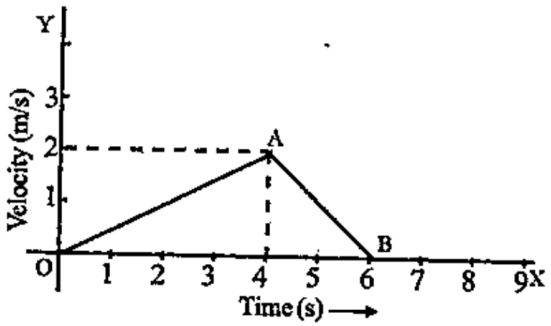
14. Examine the graph and answer the following question.

Say whether the acceleration from O to A is uniform? What about from A to B?



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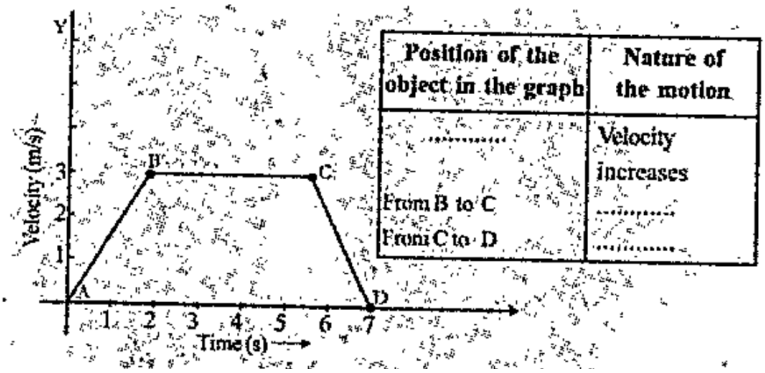
15. Complete the table by analysing the graph



Position of the object in the graph	Nature of the motion
.....	Velocity increases
From B to C	.....
From C to D	.....

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16. If a velocity of a train which starts from rest is 72km/h (20m/s) after 5 minute, find out its acceleration and the distance travelled by the train in this time.

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17. A car attains a velocity of 54km/h (15m/s) within 5second from an initial velocity of 18km/h(5m/s). Calculate its acceleration and displacement.

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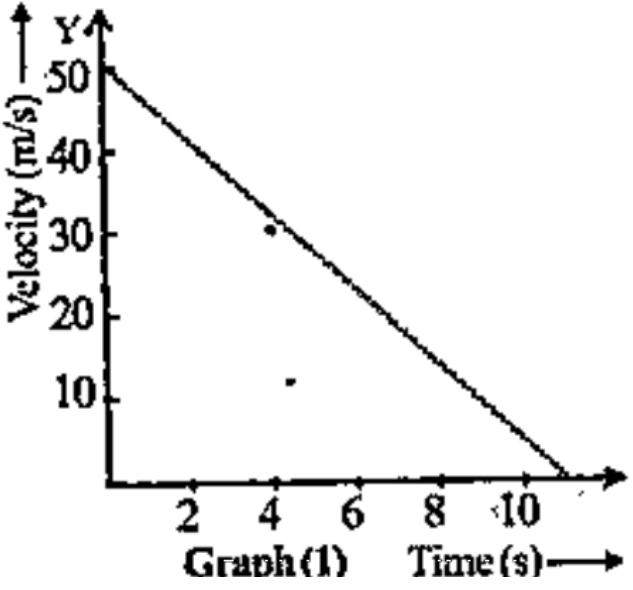
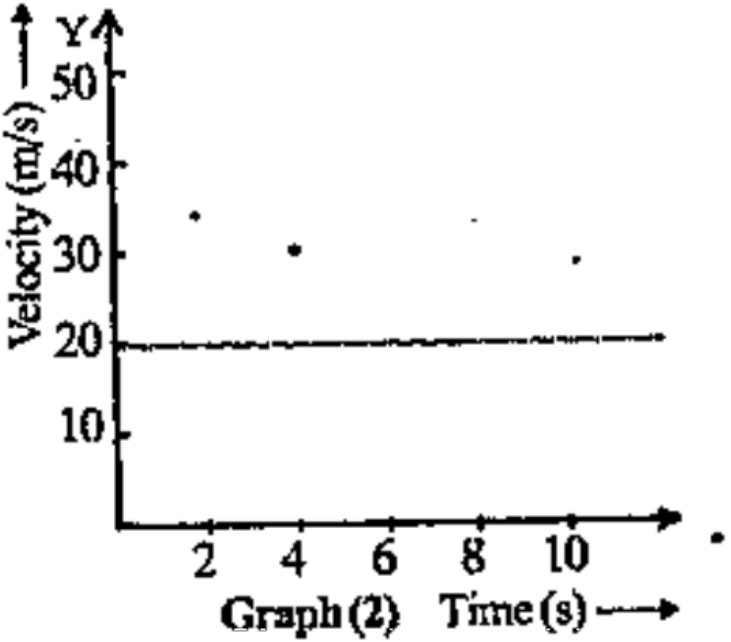
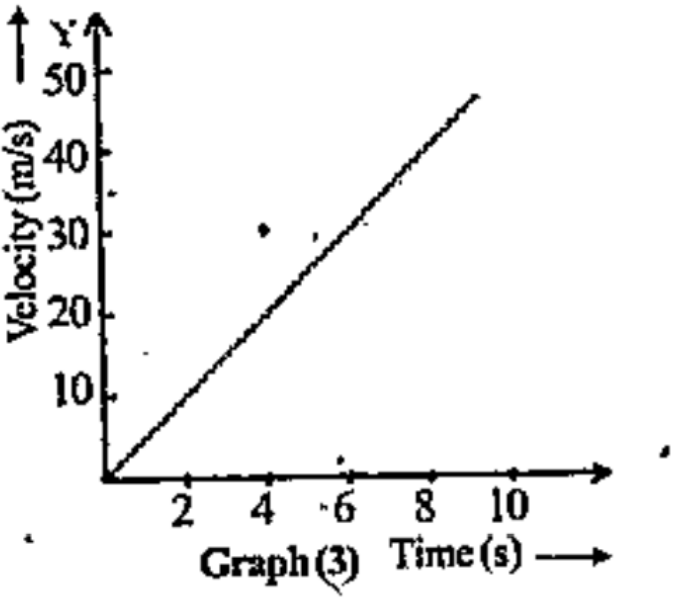
18. Analyse the graphs given below.

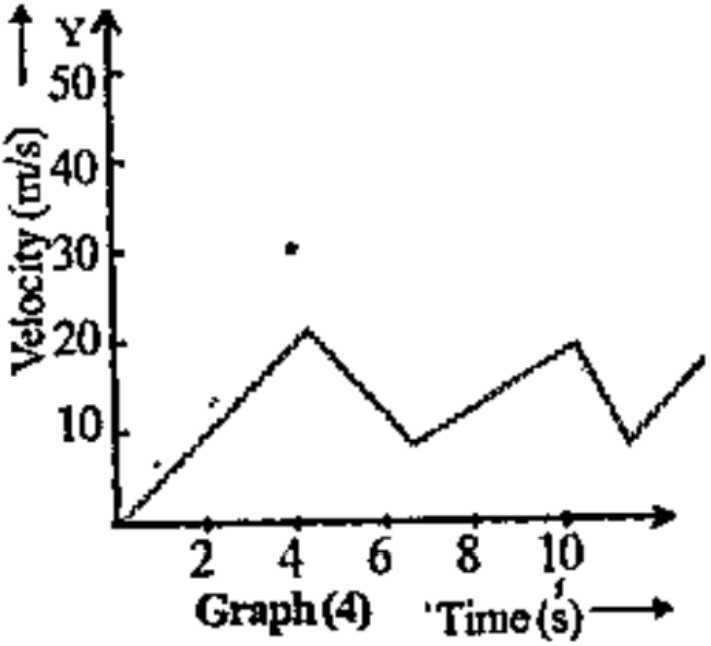
Which graph indicates uniform velocity?


Y
Velocity (m/s)
50
40
30
20
10
2
4
6
8
10
Graph (1)
Time (s)


Y
Velocity (m/s)
50
40
30
20
10
2
4
6
8
10
Graph (2)
Time (s)



Graph (3)



Graph (4)

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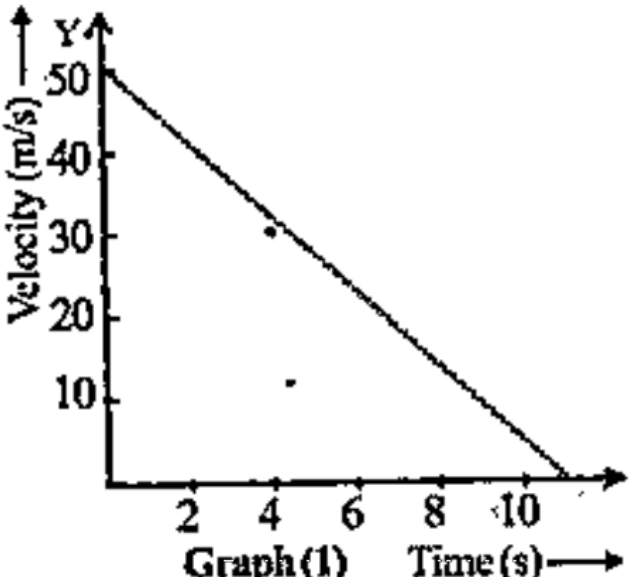
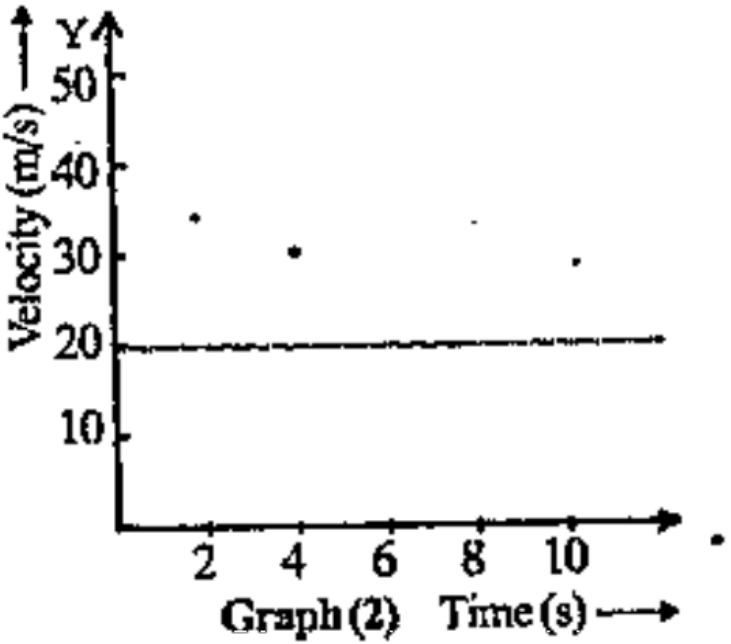
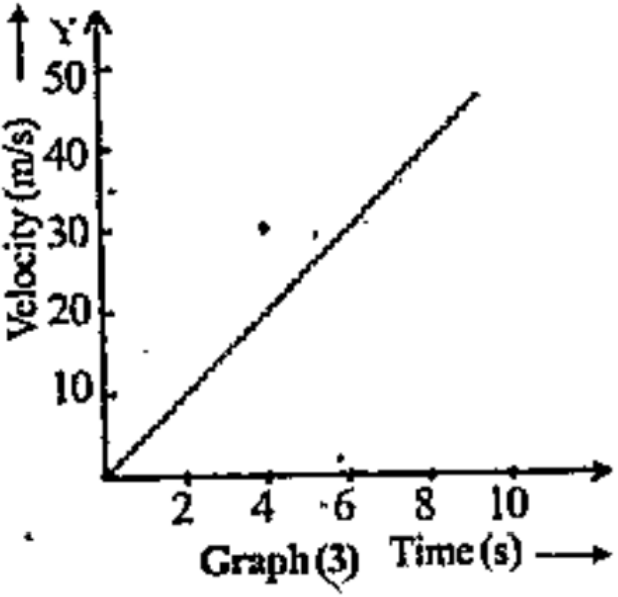
19. Analyse the graphs given below.

Which graph indicates non uniform velocity?

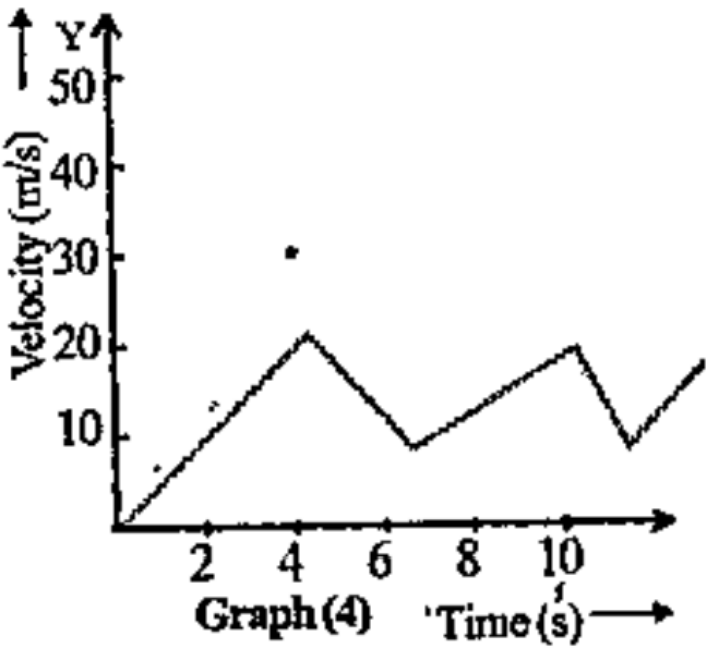




Graph (2)



Graph (3)



Graph (4)

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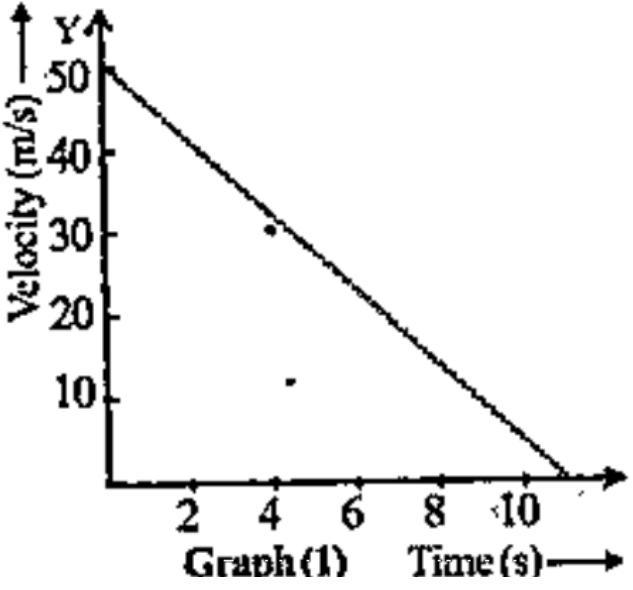
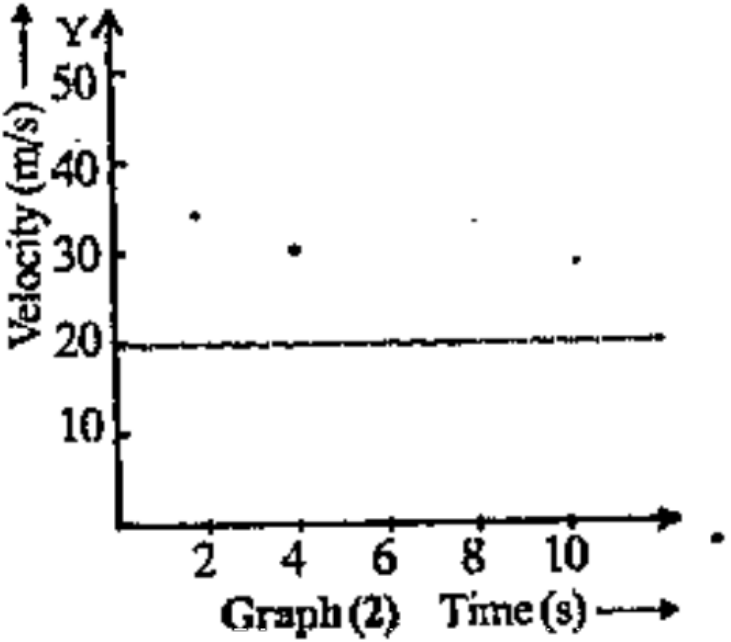
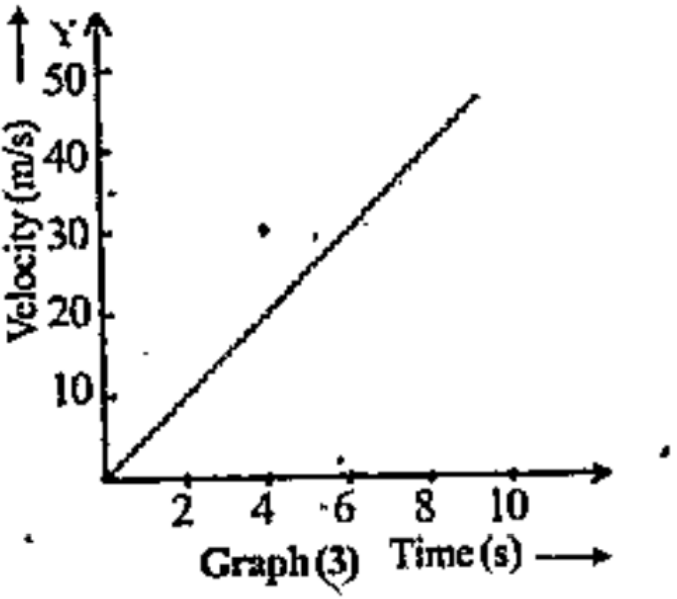
20. Analyse the graphs given below.

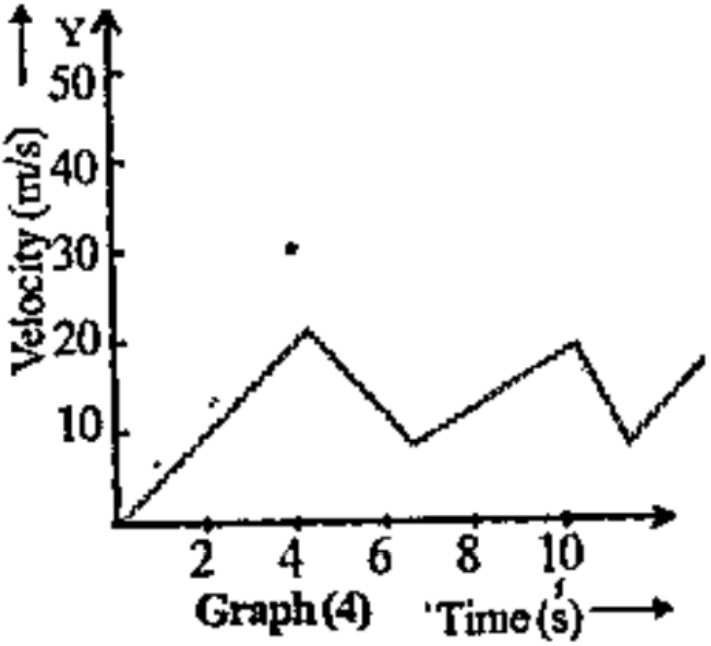
Which graph indicates the motion of freely falling stone?


Y
Velocity (m/s)
50
40
30
20
10
2
4
6
8
10
Graph (1)
Time (s)


Y
Velocity (m/s)
50
40
30
20
10
2
4
6
8
10
Graph (2)
Time (s)



Graph (3)



Graph (4)

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21. Write the equation of motion. What does each letter indicate?

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22. An object starting from rest travels with a uniform acceleration of $5\frac{m}{s^2}$. Calculate the velocity and distance travelled after 1 minute?

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23. Draw velocity-time graph on the basis of the given table.

Time (s)	0	5	10	15	20	25	30	35	40
Velocity(m/s)	0	10	20	20	20	15	10	5	0

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