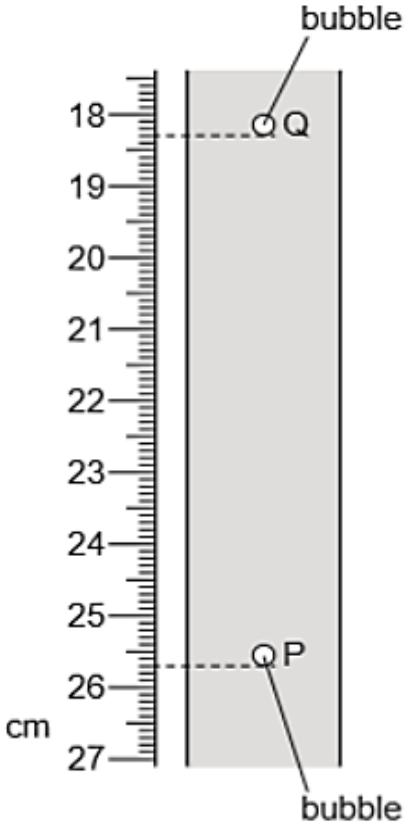
Choose the Correct Answer:

1. **A student determines the average speed of a bubble rising through a liquid at constant speed. When the student starts the stopwatch, the bubble is at position P. After 2.0 s the bubble is at position Q.**



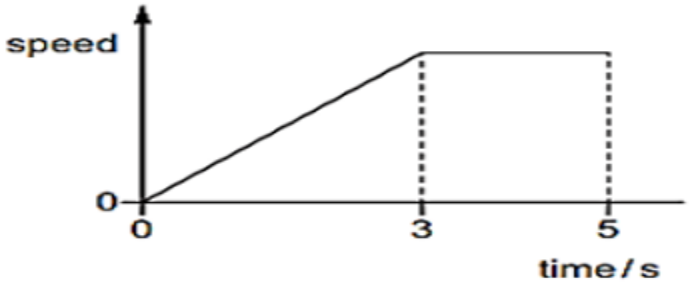
What is the speed of the bubble between P and Q?

A. 3.2 cm / s
B. 3.7 cm / s
C. 6.4 cm / s
D. 7.4 cm / s

2. **A car travels at an average speed of 60 Km/h for 15 minutes. How far does the car travel in 15 minutes?**

A. 4.0 Km
B. 15 Km
C. 240 Km
D. 900 Km

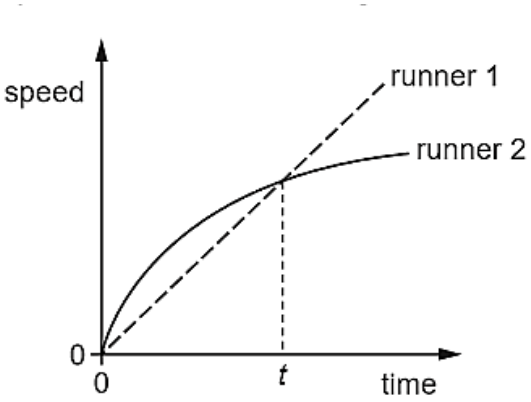
3. The graph shows the motion of a car for a five-second period.



Which row is correct?

	the car is at rest at	the car is moving at a constant speed at
A	0.0 s	2.0 s
B	0.0 s	4.0 s
C	4.0 s	0.0 s
D	4.0 s	2.0 s

4. Two runners take part in a race.
The graph shows how the speed of each runner changes with time.



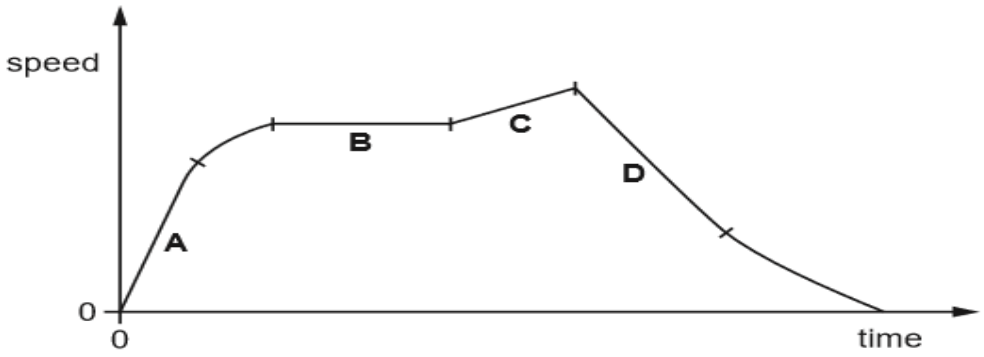
What does the graph show about the runners at time t?

A. Both runners are moving at the same speed.
B. Runner 1 has zero acceleration.
C. Runner 1 is overtaking runner 2.
D. Runner 2 is slowing down.

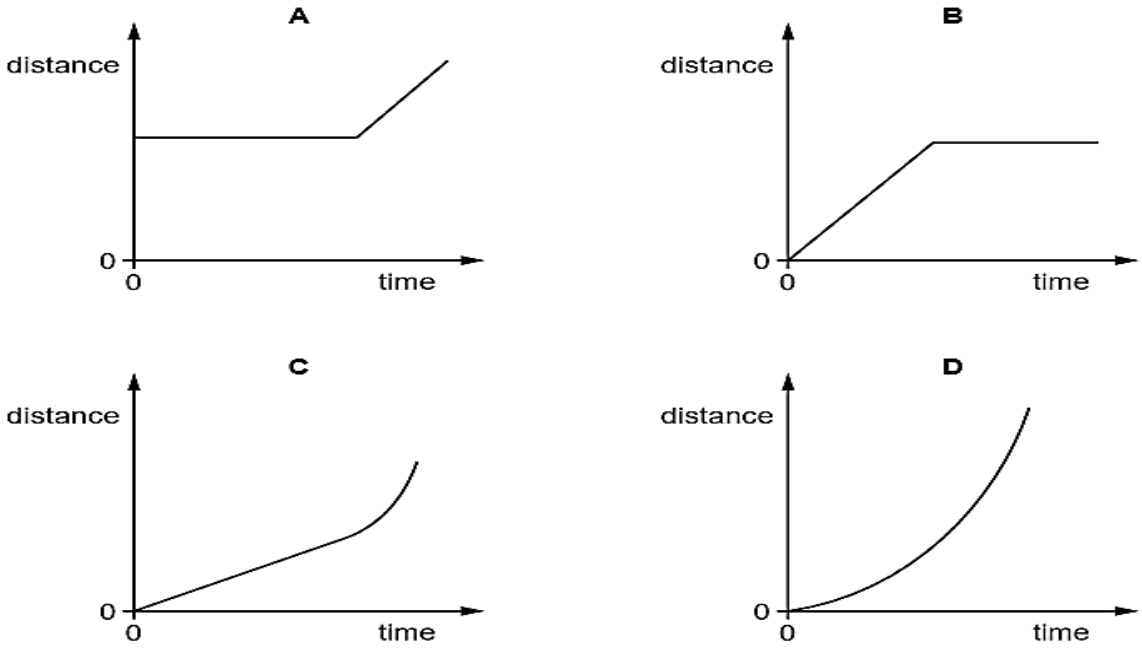
5. A car travels along a straight road.

The speed-time graph for this journey is shown.

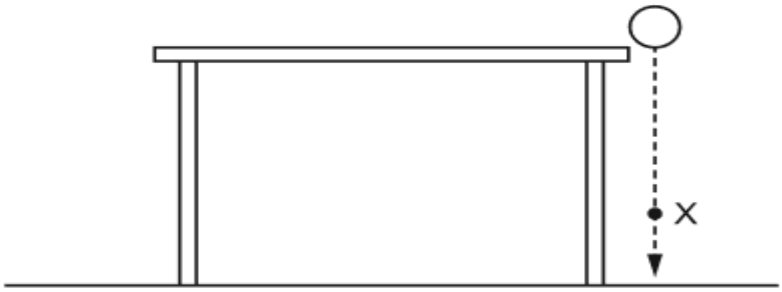
During which labelled part of the journey is the resultant force on the car zero?



6. An object moves at a constant speed for some time, then begins to accelerate.
Which distance-time graph shows this motion?



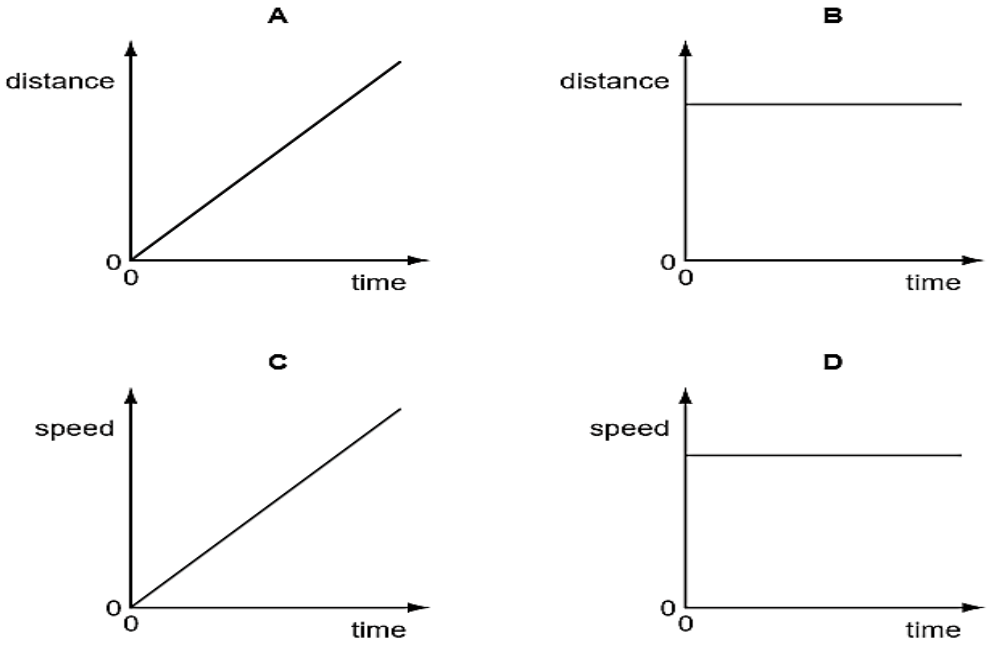
7. A ball is dropped from a table-top. Air resistance may be ignored.



Which row describes the velocity and the acceleration of the ball at point X?

	acceleration	velocity
A	constant	constant
B	constant	increasing
C	increasing	constant
D	increasing	increasing

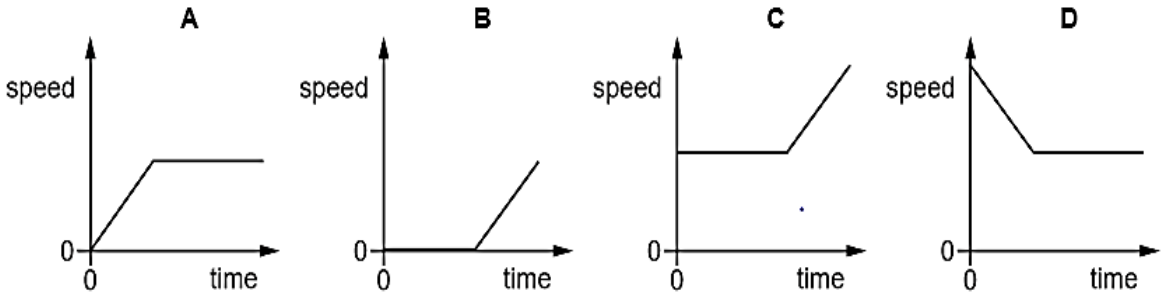
8. Two distance-time graphs and two speed-time graphs are shown.
Which graph represents an object that is at rest?



9. What does the area under a speed-time graph represent?

A. acceleration
B. average speed
C. deceleration
D. distance travelled

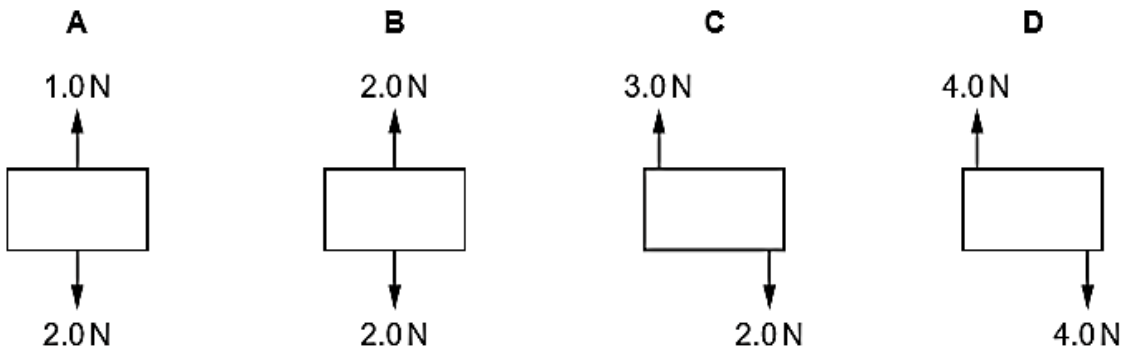
10. A car moves with constant speed and then constant acceleration.
Which graph is the speed-time graph for the car?



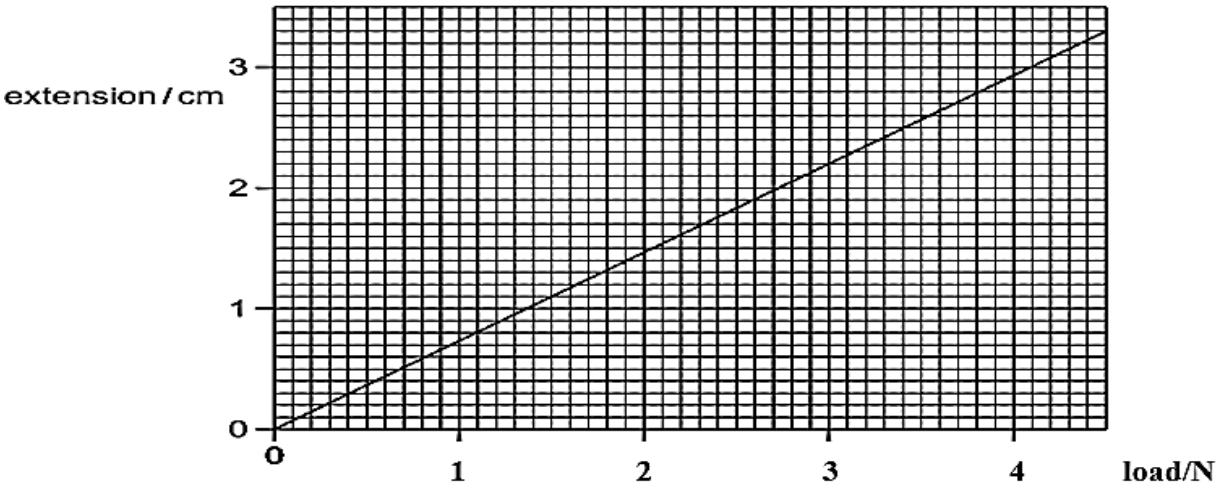
11. Which of the following represent a vector quantity?

A. m/s
B. m/s north
C. kilometer
D. Second

12. Four objects are each acted on by only two forces, as shown.
Which object is in equilibrium?



13. The extension-load graph for a spring is shown. The unstretched length of the spring is 17.0 cm.

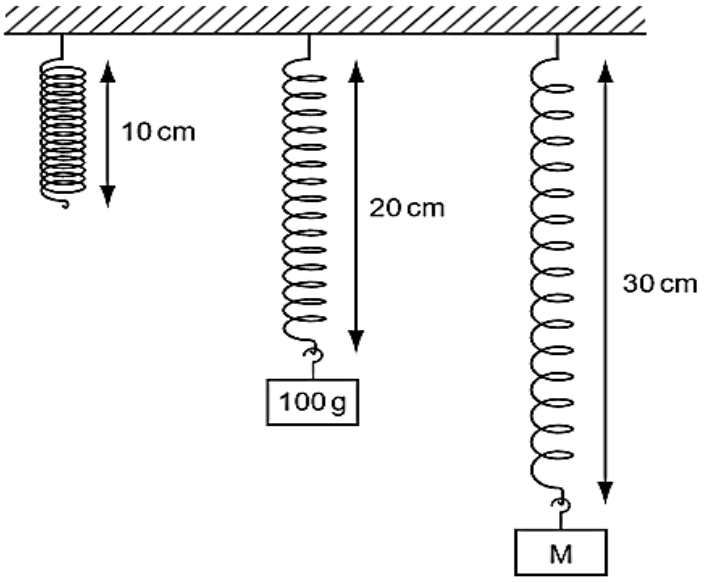


When an object is hung from the spring, the length of the spring is 19.2 cm.

What is the weight of the object?

A. 1.4 N **B. 1.6 N** **C. 2.6 N** **D. 3.0 N**

14. Objects with different masses are hung on a spring. The diagram shows how much the spring stretches.



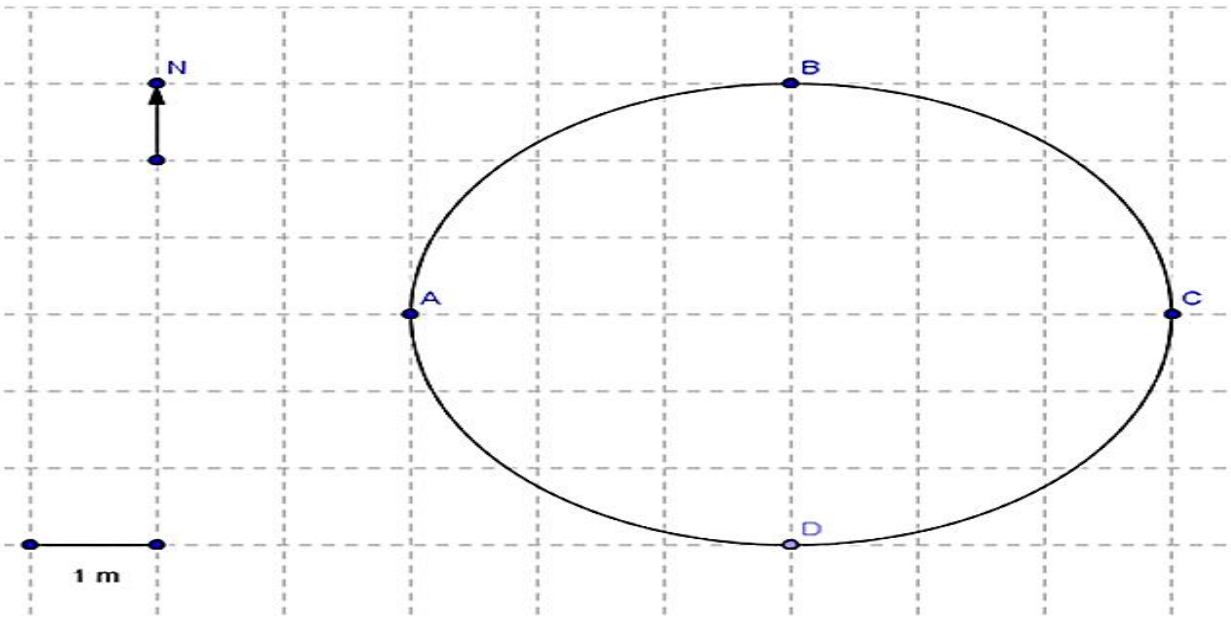
The extension of the spring is directly proportional to the mass hung on it.

What is the mass of the object M?

A. 110 g
B. 150 g
C. 200 g
D. 300 g

Study the figure below to Answer questions 15, 16 and 17.

An object moves from point A to B to C to D and finally to A along the circle shown in the figure below.



15. What is the distance covered by the moving object from A to D?

A. 6 π m
B. 3 π m
C. 0
D. 4.5 π m

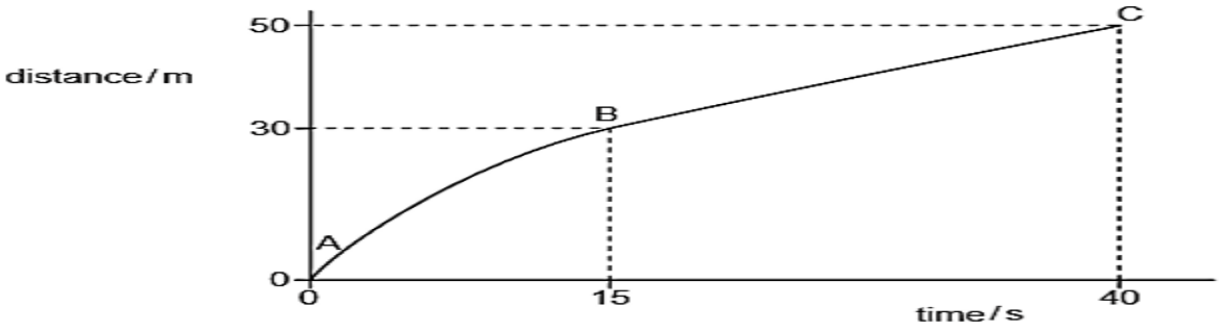
16. What is the magnitude of the displacement of the object when the object returned back to A?

A. 6 π m
B. 3 π m
C. 0
D. 4.5 π m

17. What is the distance covered by the moving object when the body returned back to A?

A. 6 π m
B. 3 π m
C. 0
D. 4.5 π m

18. The figure below shows a distance-time graph for a moving object



What is the average speed of the object during the 40 seconds?

A. 2m/s
B. 1.25 m/s
C. 0.5 m/s
D. 0.8 m/s

19. A car starts from rest and has a uniform acceleration of 2 m/s^2.
Find the speed of the car after 1 minutes.
A. 2 m/s
B. 2 m/s^2
C. 120 m/s
D. 120 m/s^2

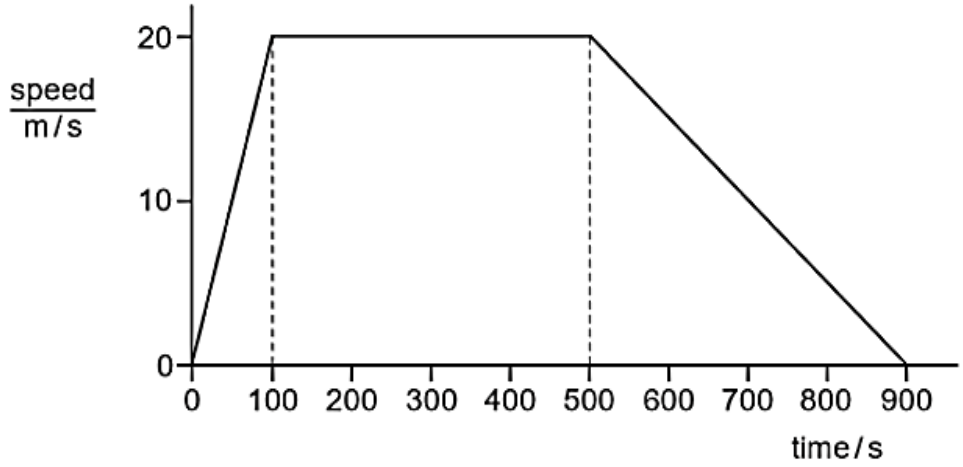
Q.20-21

An object of mass 60 kg, what is the weight of that object on earth and on Jupiter, knowing that acceleration due to gravity on earth = 10 m/s^2 and the acceleration due to gravity on Jupiter= 25 m/s^2.

20. The weight of the object on earth
A. 1500 N
B. 600N
C. 600 Kg
D. 1500 Kg

21. The weight of the object on Jupiter.
A. 1500 N
B. 600N
C. 600 Kg
D. 1500 Kg

22. The graph represents the motion of a train travelling between two stations.



Which statement about the train is correct?

A. Its acceleration takes a longer time than its deceleration.
B. It travels at constant speed for less than half of its journey time.
C. It travels 2000 m in the first 100 s.
D. It travels 10000 m at constant speed.