

ACCELERATION-SET-1

1

A small steel ball is dropped from a low balcony.

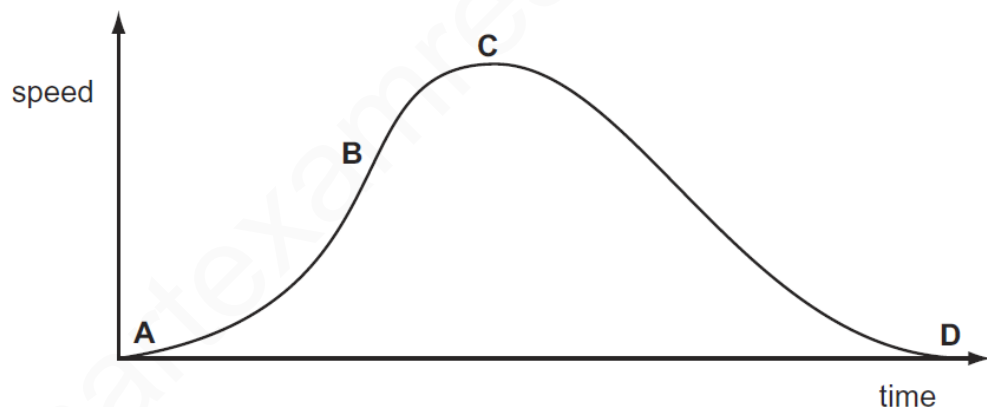
Ignoring air resistance, which statement describes its motion?

- A** It falls with constant acceleration.
- B** It falls with constant speed.
- C** It falls with decreasing acceleration.
- D** It falls with decreasing speed.

2

The speed-time graph shown is for a bus travelling between stops.

Where on the graph is the acceleration of the bus the greatest?



3

Which person is experiencing an acceleration?

- A** a driver of a car that is braking to stop at traffic lights
- B** a passenger in a train that is stationary in a railway station
- C** a shopper in a large store ascending an escalator (moving stairs) at a uniform rate
- D** a skydiver falling at constant speed towards the Earth

4

Below are four statements about acceleration.

Which statement is **not** correct?

- A** Acceleration always involves changing speed.
- B** Changing direction always involves acceleration.
- C** Changing speed always involves acceleration.
- D** Circular motion always involves acceleration.

5

A sprinter runs a 100 m race in a straight line. The table shows how his speed changes with time for the first 5.0 s of the race.

speed m/s	0	1.7	4.1	5.7	6.5	6.8
time/s	0	1.0	2.0	3.0	4.0	5.0

What is the average acceleration of the sprinter between time 2.0 s and time 3.0 s?

- A** 1.6 m/s^2
- B** 1.9 m/s^2
- C** 4.1 m/s^2
- D** 5.7 m/s^2

6

The velocity of an object increases from 30 m/s to 50 m/s in 5.0 seconds.

What is the average acceleration of the object?

- A** 0.10 m/s^2
- B** 0.25 m/s^2
- C** 4.0 m/s^2
- D** 10 m/s^2

7

Four students try to explain what is meant by acceleration.

Which student makes a correct statement?

- A** It is related to the changing speed of an object.
- B** It is the distance an object travels in one second.

8

A ball is thrown upwards.

What effect does the force of gravity have on the ball?

- A** It produces a constant acceleration downwards.
- B** It produces a constant acceleration upwards.
- C** It produces a decreasing acceleration upwards.
- D** It produces an increasing acceleration downwards.

9

The table shows the readings on a car speedometer at 5 second intervals.

time / s	speed km/h
0	0
5	30
10	50
15	60
20	65

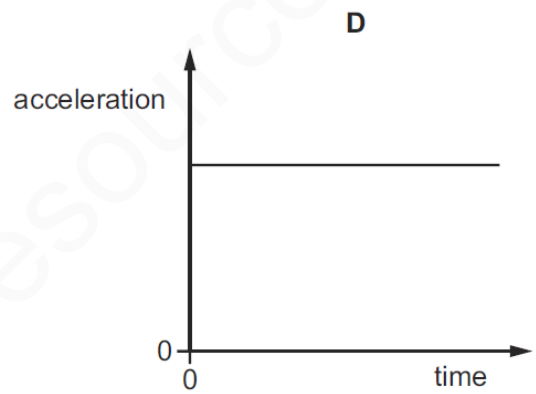
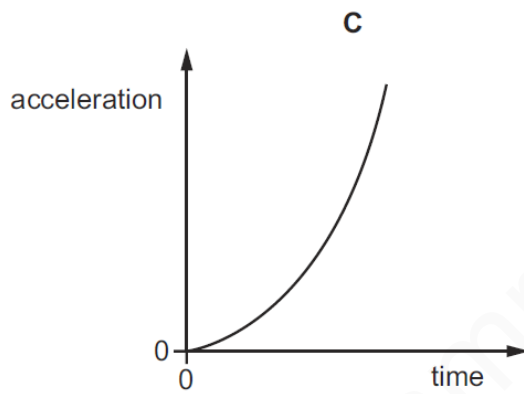
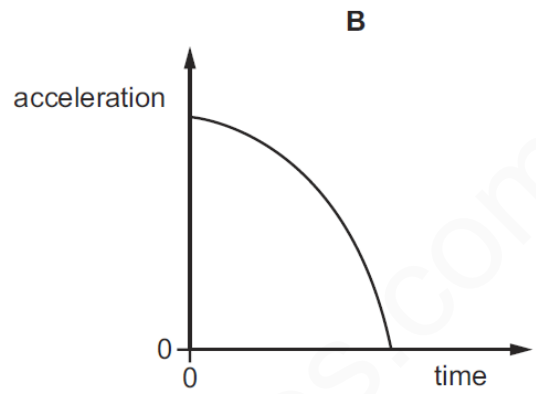
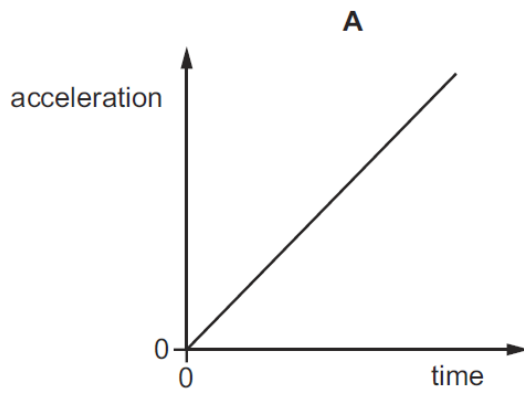
Which row describes the speed and the acceleration of the car?

	speed	acceleration
A	decreasing	zero
B	decreasing	not zero
C	increasing	zero
D	increasing	not zero

10

A stone falls freely from the top of a cliff. Air resistance may be ignored.

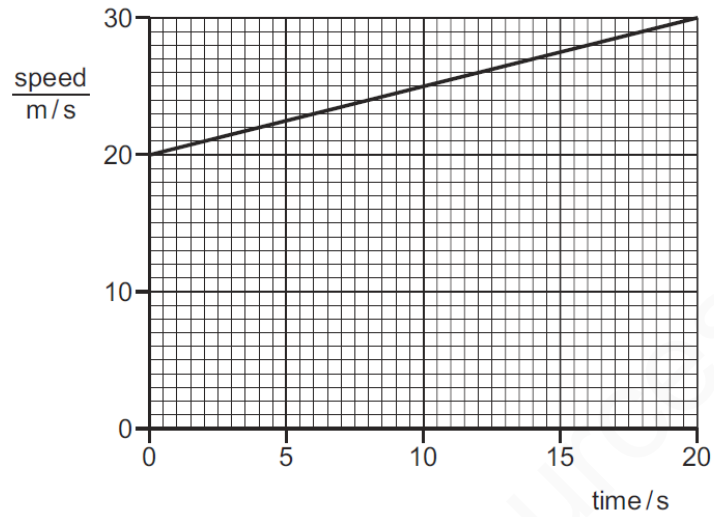
Which graph shows how the acceleration of the stone varies with time as it falls?



11

A car travels along a horizontal road in a straight line. The driver presses the accelerator to increase the speed of the car.

The speed-time graph for the car is shown.



What is the acceleration of the car?

- A** 0.50 m/s^2 **B** 1.00 m/s^2 **C** 1.50 m/s^2 **D** 2.00 m/s^2