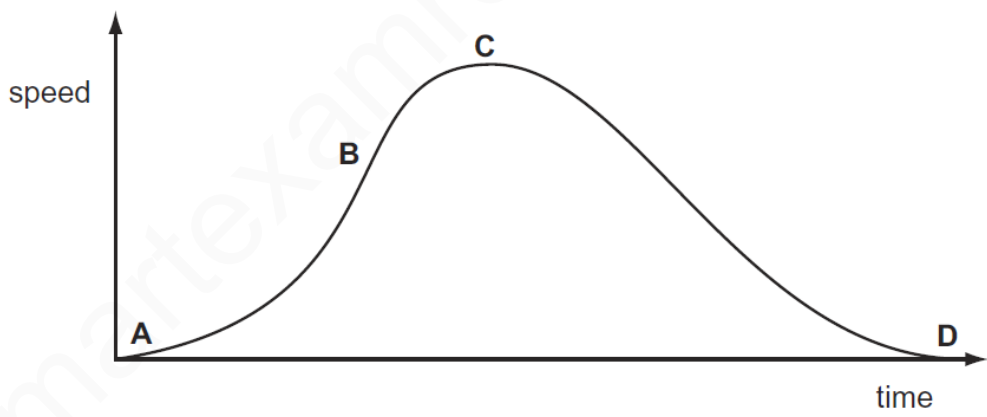


## ACCELERATION-TIME-SET-1

1	<p>A small steel ball is dropped from a low balcony.</p> <p>Ignoring air resistance, which statement describes its motion?</p> <p><b>A</b> It falls with constant acceleration.</p> <p><b>B</b> It falls with constant speed.</p> <p><b>C</b> It falls with decreasing acceleration.</p> <p><b>D</b> It falls with decreasing speed.</p>
MS-1	A
2	<p>The speed-time graph shown is for a bus travelling between stops.</p> <p>Where on the graph is the acceleration of the bus the greatest?</p> 
MS-2	B
3	<p>Which person is experiencing an acceleration?</p> <p><b>A</b> a driver of a car that is braking to stop at traffic lights</p> <p><b>B</b> a passenger in a train that is stationary in a railway station</p> <p><b>C</b> a shopper in a large store ascending an escalator (moving stairs) at a uniform rate</p> <p><b>D</b> a skydiver falling at constant speed towards the Earth</p>
MS-3	A

4	<p>Below are four statements about acceleration.</p> <p>Which statement is <b>not</b> correct?</p> <p><b>A</b> Acceleration always involves changing speed.</p> <p><b>B</b> Changing direction always involves acceleration.</p> <p><b>C</b> Changing speed always involves acceleration.</p> <p><b>D</b> Circular motion always involves acceleration.</p>														
MS-4	A														
5	<p>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.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">speed m/s</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1.7</td> <td style="text-align: center;">4.1</td> <td style="text-align: center;">5.7</td> <td style="text-align: center;">6.5</td> <td style="text-align: center;">6.8</td> </tr> <tr> <td style="text-align: center;">time/s</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">2.0</td> <td style="text-align: center;">3.0</td> <td style="text-align: center;">4.0</td> <td style="text-align: center;">5.0</td> </tr> </table> <p>What is the average acceleration of the sprinter between time 2.0 s and time 3.0 s?</p> <p><b>A</b> 1.6 m/s<sup>2</sup>      <b>B</b> 1.9 m/s<sup>2</sup>      <b>C</b> 4.1 m/s<sup>2</sup>      <b>D</b> 5.7 m/s<sup>2</sup></p>	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
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									
MS-5	A														
6	<p>The velocity of an object increases from 30 m/s to 50 m/s in 5.0 seconds.</p> <p>What is the average acceleration of the object?</p> <p><b>A</b> 0.10 m/s<sup>2</sup>      <b>B</b> 0.25 m/s<sup>2</sup>      <b>C</b> 4.0 m/s<sup>2</sup>      <b>D</b> 10 m/s<sup>2</sup></p>														
MS-6	C														

7	<p>Four students try to explain what is meant by acceleration.</p> <p>Which student makes a correct statement?</p> <p><b>A</b> It is related to the changing speed of an object.</p> <p><b>B</b> It is the distance an object travels in one second.</p>
MS-7	A
8	<p>A ball is thrown upwards.</p> <p>What effect does the force of gravity have on the ball?</p> <p><b>A</b> It produces a constant acceleration downwards.</p> <p><b>B</b> It produces a constant acceleration upwards.</p> <p><b>C</b> It produces a decreasing acceleration upwards.</p> <p><b>D</b> It produces an increasing acceleration downwards.</p>
MS-8	A

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
<b>A</b>	decreasing	zero
<b>B</b>	decreasing	not zero
<b>C</b>	increasing	zero
<b>D</b>	increasing	not zero

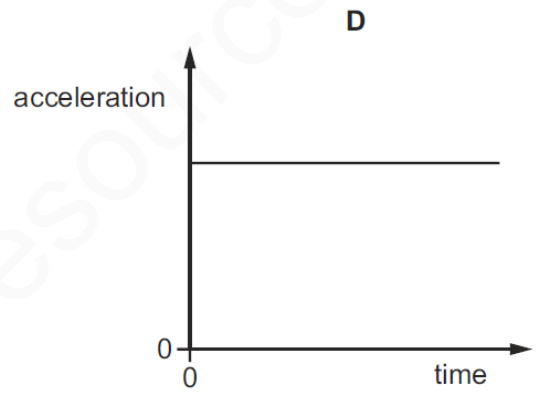
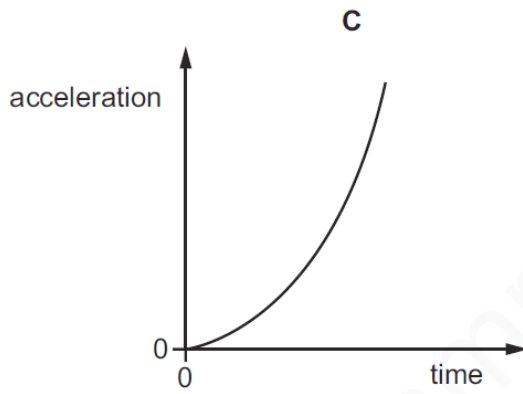
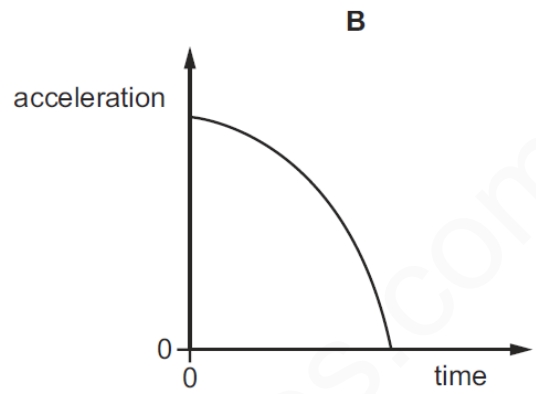
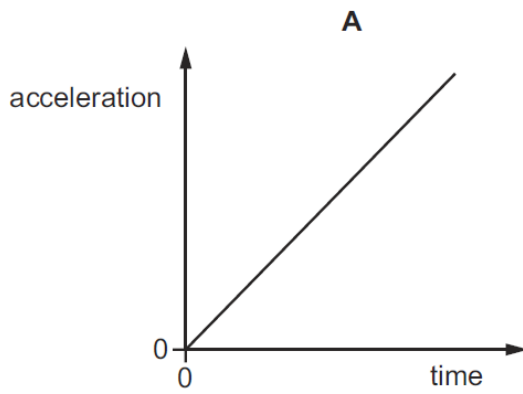
MS-9

D

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?



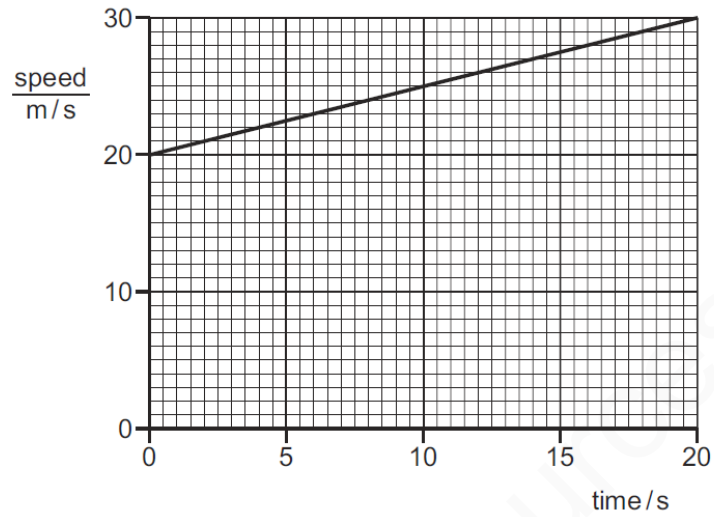
MS-10

D

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**  $0.50 \text{ m/s}^2$     **B**  $1.00 \text{ m/s}^2$     **C**  $1.50 \text{ m/s}^2$     **D**  $2.00 \text{ m/s}^2$

MS-11

A