Motion

Question Paper 2

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	Motion
Booklet	Question Paper 2

Time allowed: **20 minutes**

Score: **/16**

Percentage: **/100**

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	55%	50%	43%	35%	<30%

The graph represents the motion of a train travelling between two stations.
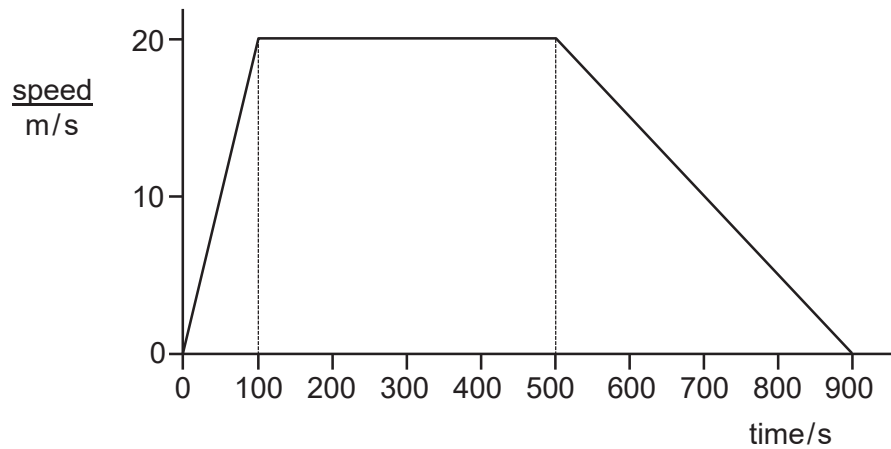
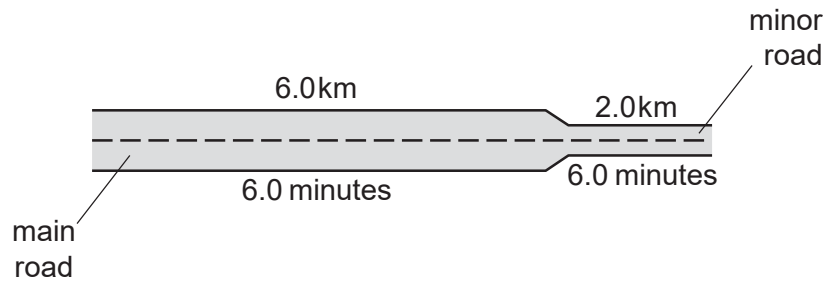Which statement about the train is correct?

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 10 000 m at constant speed.

A car travels 6.0 km along a main road in 6.0 minutes. It then travels 2.0 km along a minor road in 6.0 minutes.
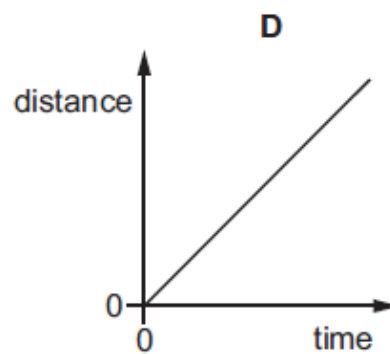

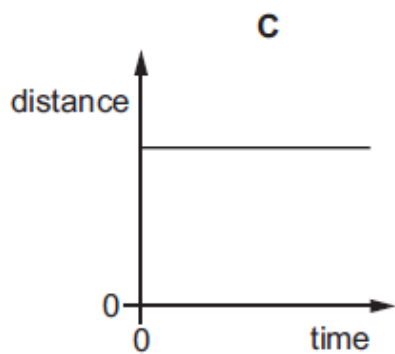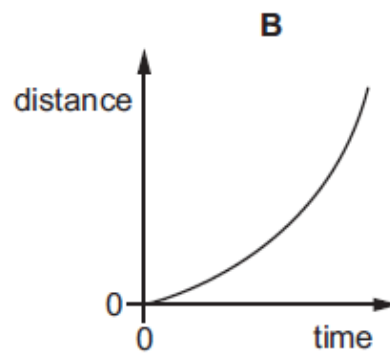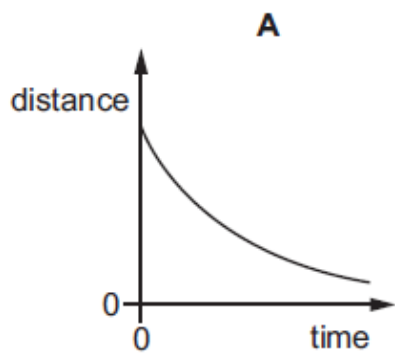Which calculation of average speed for the whole journey is correct?

A $8.0 \div 12.0 = 0.67\,\text{km}/\text{minute}$

B $12.0 \div 8.0 = 1.5\,\text{km}/\text{minute}$

C $8.0 + 12.0 = 20\,\text{km}/\text{minute}$

D $8.0 \times 12.0 = 96\,\text{km}/\text{minute}$

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Which distance / time graph represents the motion of an object moving at constant speed?

A

distance

0

0   time

B

distance

0

0   time

C

distance

0

0   time

D

distance

0

0   time

The graph shows how the speed of a car changes with time.
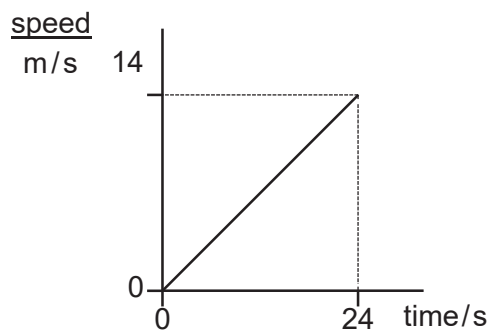
Which calculation gives the distance travelled by the car in 24 seconds?

A $\left(\dfrac{14}{24}\right)$ m

B $\left(\dfrac{24}{14}\right)$ m

C $\left(\dfrac{24 \times 14}{2}\right)$ m

D (24×14) m
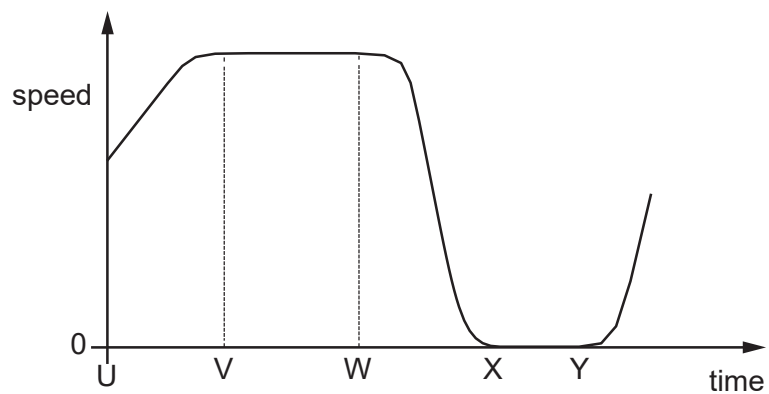
A car takes 15 minutes to travel along a road that is 20 km long.

What is the average speed of the car?

A   0.75 km/h   B   5.0 km/h   C   80 km/h   D   300 km/h

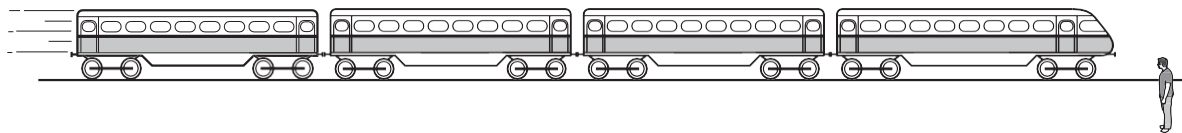The graph shows how the speed of a car changes with time.

Between which two times is the car stationary?

A   U and V   B   V and W   C   W and X   D   X and Y

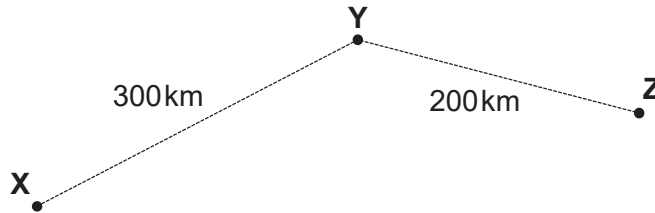A man stands by a railway track.

A train travelling at 40 m / s takes 2.0 s to pass the man.

What is the length of the train?

A   20 m   B   38 m   C   40 m   D   80 m

An aeroplane flies from town **X** to town **Z**, stopping for 1 hour at town **Y** to pick up more passengers. The distances between the towns are shown in the diagram.
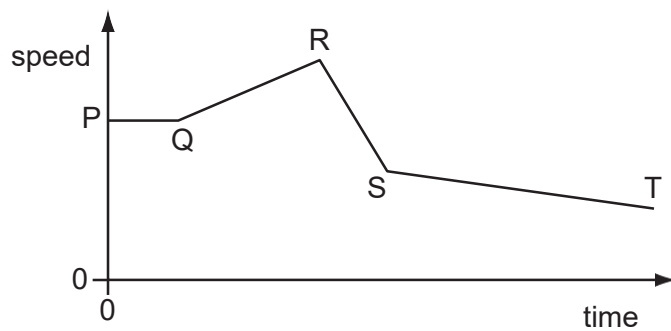

The total time taken between leaving **X** and arriving at **Z** is 3 hours.

What is the average speed of the aeroplane **in the air**?

A $\dfrac{500}{4}$ km/h   B $\dfrac{500}{3}$ km/h   C $\dfrac{500}{2}$ km/h   D $\dfrac{500}{1}$ km/h

The diagram shows the speed/time graph for a train as it travels along a track.

For which part of the graph is the train's speed changing at the greatest rate?

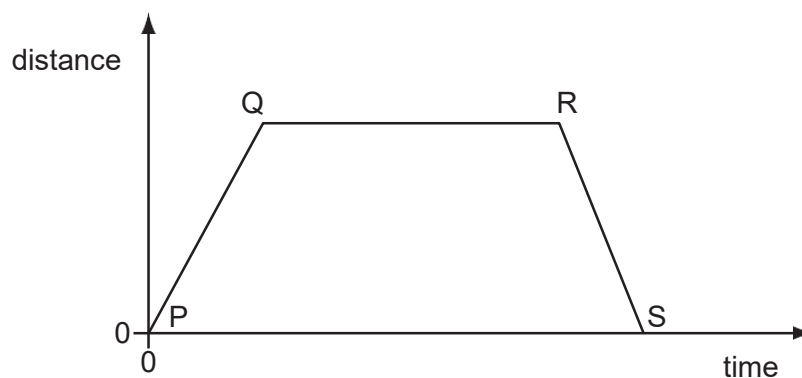A   PQ   B   QR   C   RS   D   ST

9

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 speed.

D.   It falls with increasing acceleration.

The graph shows how the distance travelled by a vehicle changes with time.

Which row describes the speed of the vehicle in each section of the graph?

	P to Q	Q to R	R to S
A	constant	zero	constant
B	constant	zero	decreasing
C	increasing	constant	decreasing
D	increasing	zero	decreasing

A car is moving downhill along a road at a constant speed.

Which graph is the speed/time graph for the car?

A

speed

0
0   time

B

speed

0
0   time

C

speed

0
0   time

D

speed

0
0   time
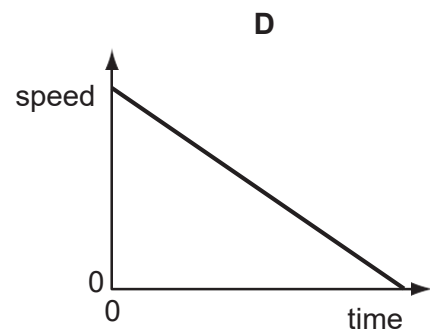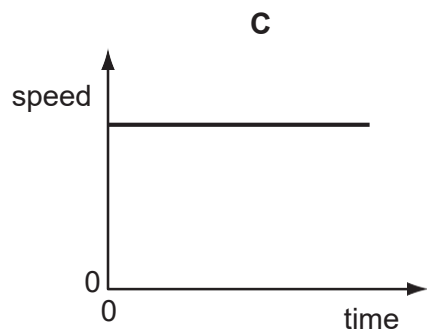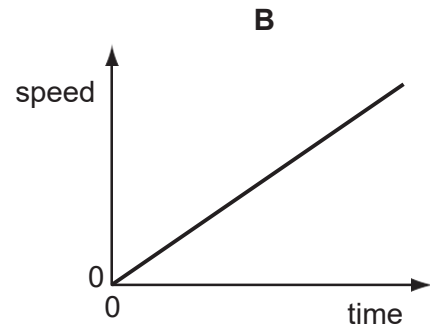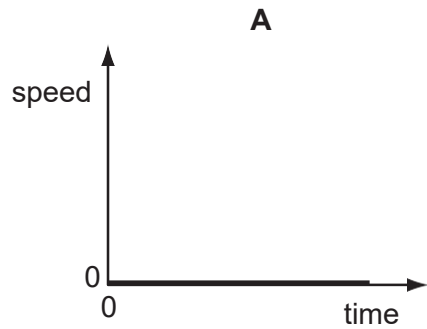
In a race, a car travels 60 times around a 3.6 km track. This takes 2.4 hours.

What is the average speed of the car?

A   1.5 km/h   B   90 km/h   C   144 km/h   D   216 km/h

A tennis player hits a ball hard and 0.40 s later hears the echo from a wall.

The speed of sound in air is 330 m/s.

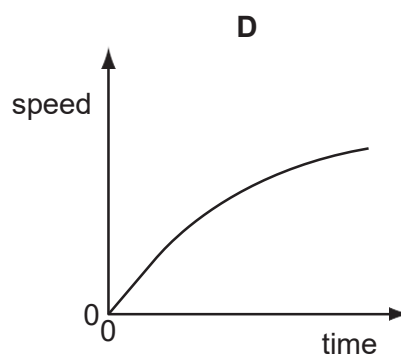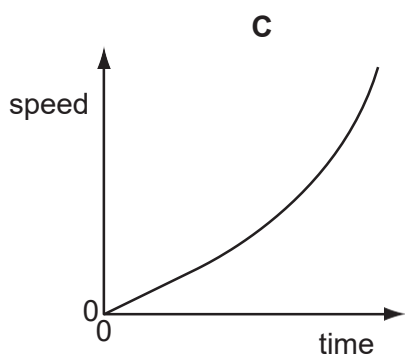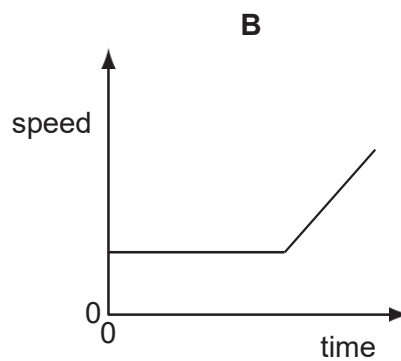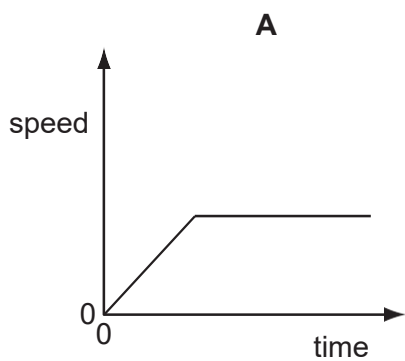How far away is the player from the wall?
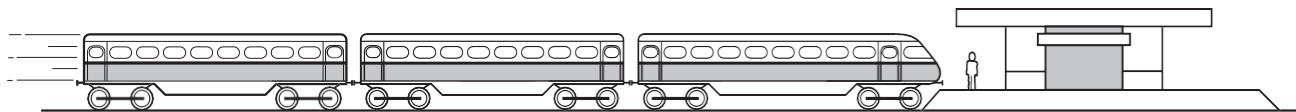
A   66 m   B   132 m   C   264 m   D   825 m

An object moves initially with constant speed and then with constant acceleration.

Which graph shows this motion?

A child is standing on the platform of a station.

A train travelling at 30 m / s takes 3.0 s to pass the child.

What is the length of the train?

A   10 m   B   27 m   C   30 m   D   90 m