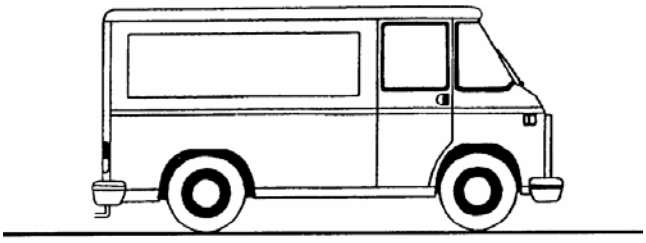
Graphs of Motion Name ……...

1.



(a) The van shown above has a fault and leaks one drop of oil every second.
The diagram below shows the oil drops left on the road as the van moves from **W** to **Z**.

Describe the motion of the van as it moves from:

W to **X** .....

.....

X to **Y** .....

.....

Y to **Z** .....

.....

(3)

(b) The van was driven for 20 seconds at a speed of 30m/s.

Calculate the distance travelled.

.....

.....

.....

Distance ..... m

(2)

(c) The van was travelling at 30m/s. It slowed to a stop in 12 seconds.

Calculate the van's acceleration.

.....

.....

.....

Acceleration ..... m/s^2

(3)

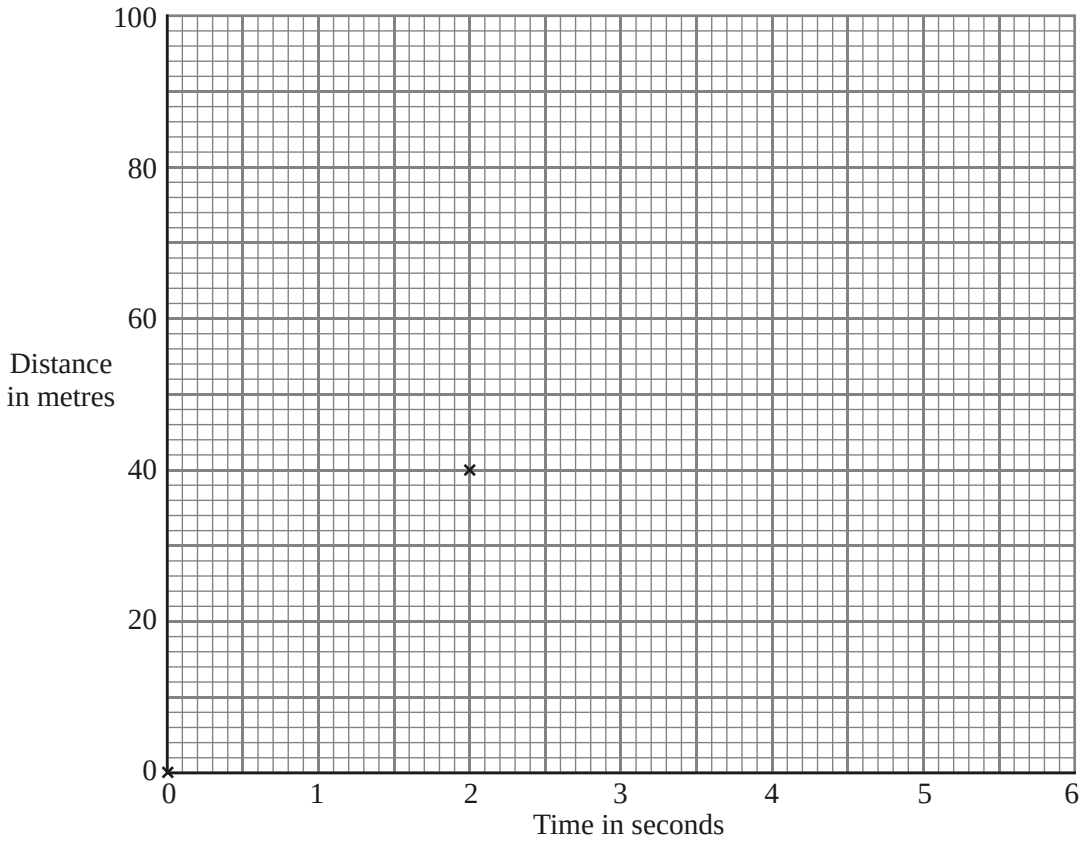
(Total 8 marks)

2. The table gives values of distance and time for a car moving along a road.

Distance in metres	0	20	40	60	80	100
Time in seconds	0	1	2	3	4	5

(a) Draw a graph of distance against time.

Two of the points have been plotted for you.



(3)

(b) Use your graph to find:

(i) the distance moved by the car in 2.5 seconds

distance =.....metres

(1)

(ii) how many seconds it takes the car to move 30 metres.

time =.....seconds

(1)

(c) Complete this sentence by crossing out the **two** lines in the box that are wrong.

The car is

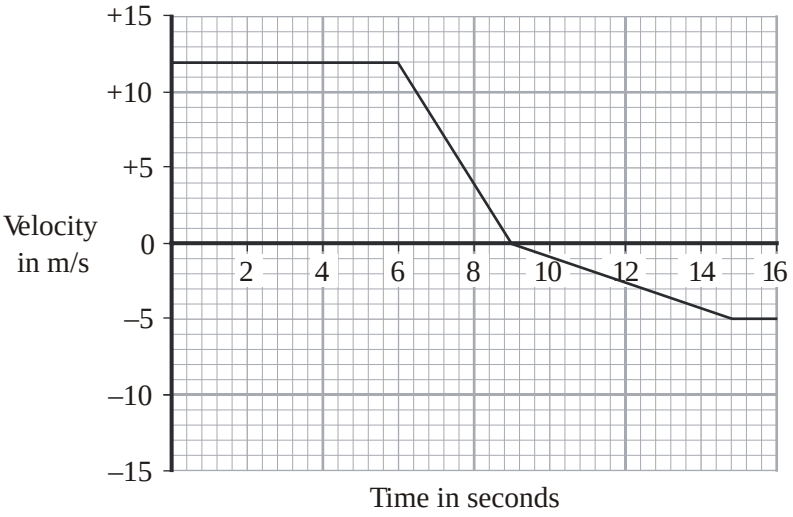
slowing down
moving at a steady speed
speeding up

.

(1)

(Total 6 marks)

3. A car is driven along a straight road. The graph shows how the velocity of the car changes during part of the journey.



(a) Use the graph to calculate the deceleration of the car between 6 and 9 seconds.

Show clearly how you work out your answer and give the unit.

.....

.....

.....

Deceleration = ...

(3)

(b) At what time did the car change direction?

..... seconds

(1)

(c) How far was the car from its starting point after 9 seconds?

..... metres

(1)

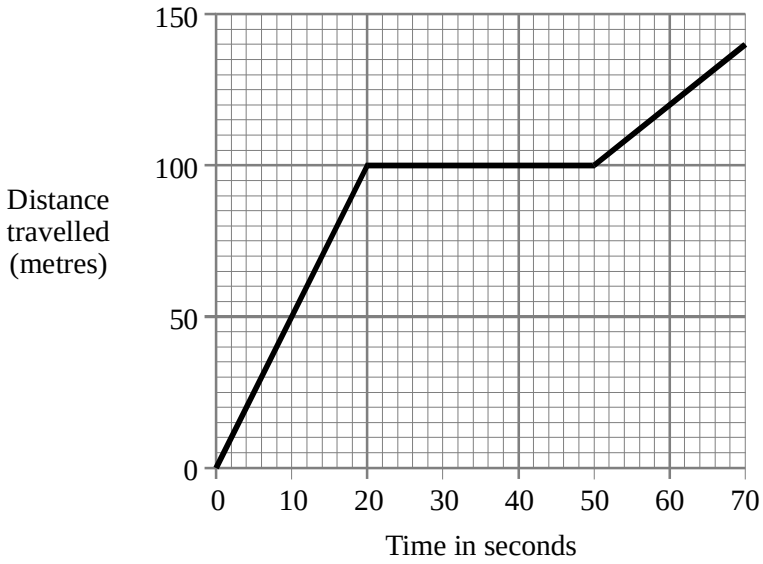
(d) How far was the car from its starting point after 16 seconds?

..... metres

(2)

(Total 7 marks)

4. A child goes out to visit a friend.
The graph shows the child's journey.



(a) Calculate the child's average speed for the whole journey.
[Show your working and give the units in your answer.]

.....

.....

.....

(3)

(b) How many times faster is the child travelling in part A of the graph than in part C?
[You should show how you obtained your answer.]

.....

.....

.....

.....

.....

(2)
(Total 5 marks)