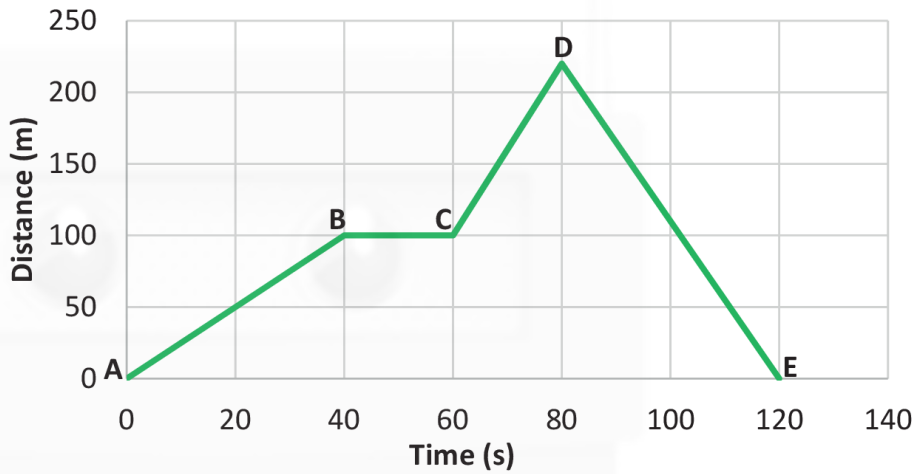


The graph below represents the journey of a cyclist.



- (a) Name an instrument that could be used to measure the time taken for the journey.

- (b) Calculate the average speed of the cyclist as he travelled from point A to point B.

Calculation

- (c) Describe the cyclist's motion between points B and C of his journey.

- (d) The cyclist's speed as he travelled from point A to point B was less than his speed as he travelled from point C to point D. What evidence is there in the graph to support this?

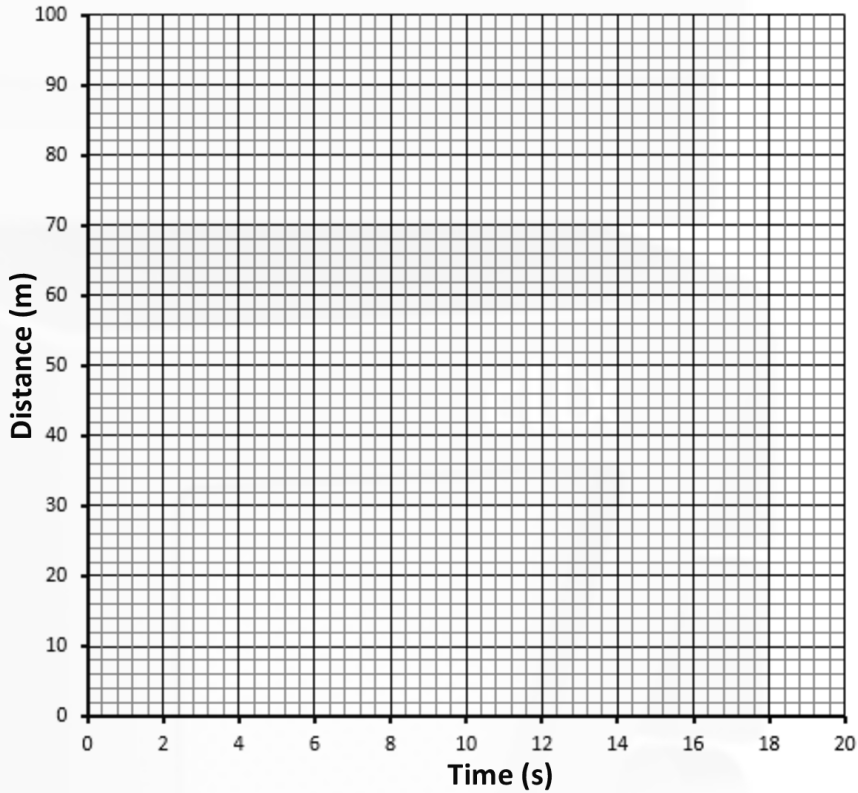
- (e) Describe what the cyclist did at point D.

- (a) The table below shows the distances travelled by two athletes, Orla and Molly, during a 100 metre race.

(24)

Distance (m)	20.0	40.0	60.0	80.0	100.0
Orla's time (s)	4.0	8.0	12.0	16.0	20.0
Molly's time (s)	4.0	8.0	11.2	14.4	17.6

- (i) Draw graphs in the grid below showing distance versus time for Orla and for Molly.



- (ii) Calculate Orla's average speed.

Calculation

- (iii) Which athlete, Orla or Molly, had a constant speed throughout the race?

Explain your answer. _____

(1)

(2)

- (c) In a 'soapbox' competition a driver raced against the clock in a straight line down a track in a vehicle with no power source. (18)



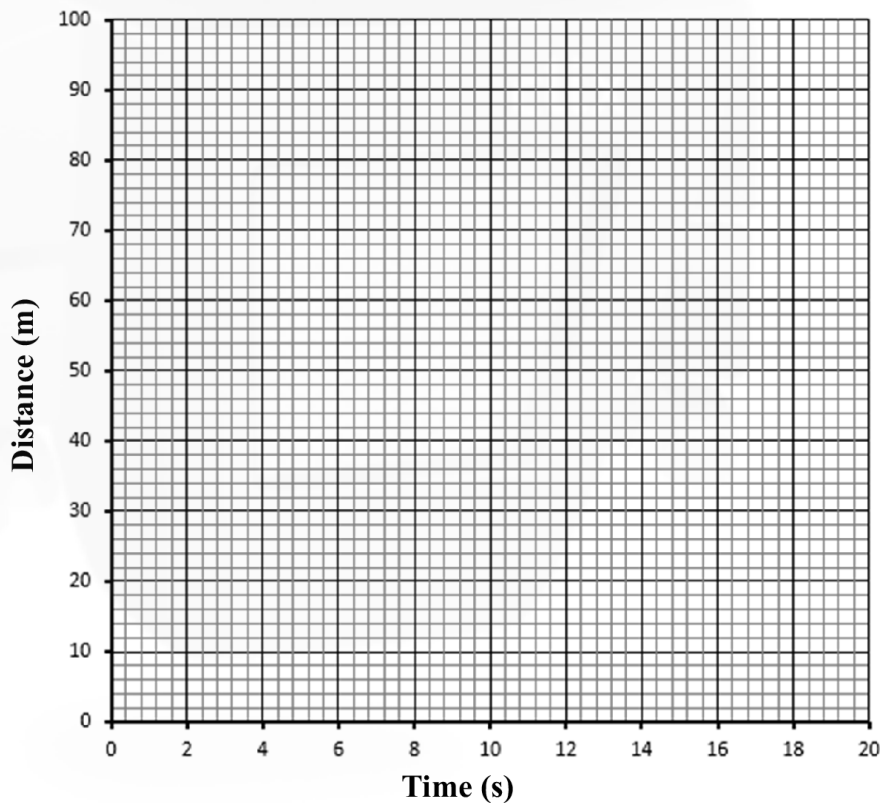
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(1) (2)

The table below gives the distances (from the start) travelled by the driver at various times during the run down the track.

Time (s)	0	4	8	12	16	20
Distance (m)	0	6	14	24	44	100

- (i) Use this table to draw a distance against time graph.



- (ii) Find the time taken for the vehicle to travel 80 m. _____

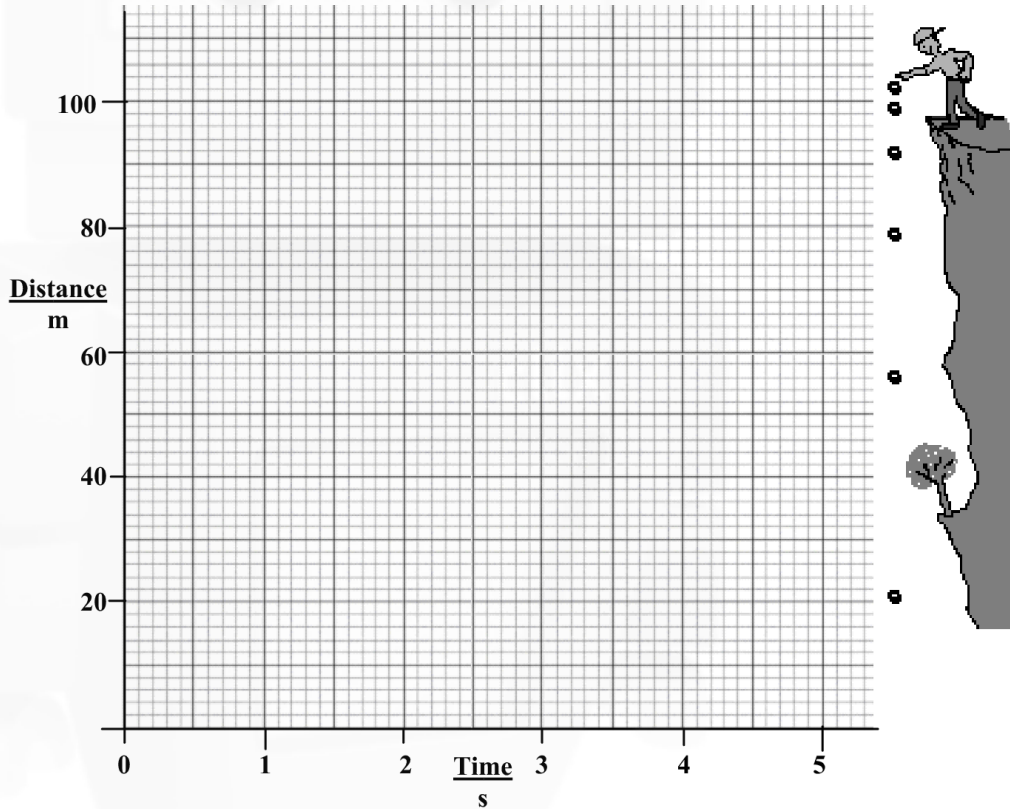
- (iii) Calculate the average speed of the vehicle during the last four seconds of the run.

- (iv) What is the difference between speed and velocity?

- (a) A stone was dropped from the top of a cliff and the distance that it fell was measured at the intervals of time as given in the table below.

Distance (m)	0	5	20	45	80	100
Time (s)	0	1	2	3	4	4.5

- (i) Draw a graph of distance against time in the grid below. A smooth curve through the plotted points is required. (9)



- (ii) Use the graph to find how far the stone had fallen in 3.5 s. (3)

- (iii) Calculate the average speed of the falling stone between the second and the fourth second. Give the unit with your answer. (6)

- (iv) In this experiment is distance fallen directly proportional to time? Justify your answer. (6)
