

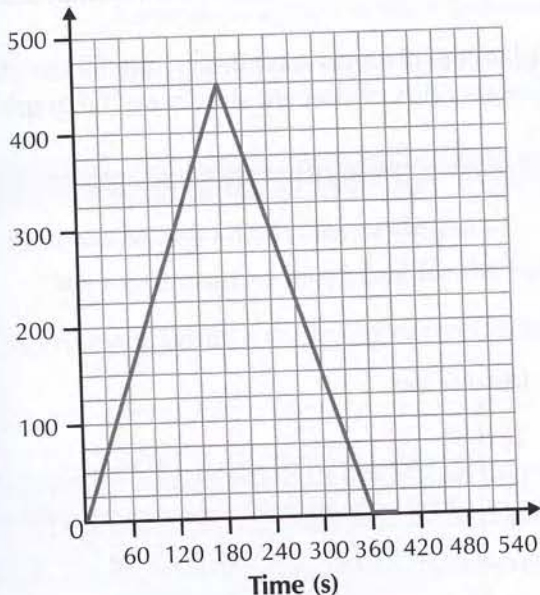
D-T and V-T Graphs

Q1

Steve walked to football training only to find that he'd left his boots at home. He turned round and walked back home, where he spent 30 seconds looking for them. To make it to training on time he had to run back at twice his walking speed.

Below is an incomplete **distance-time graph** for Steve's journey.

Distance (m)



a) How long did it take Steve to walk to training?
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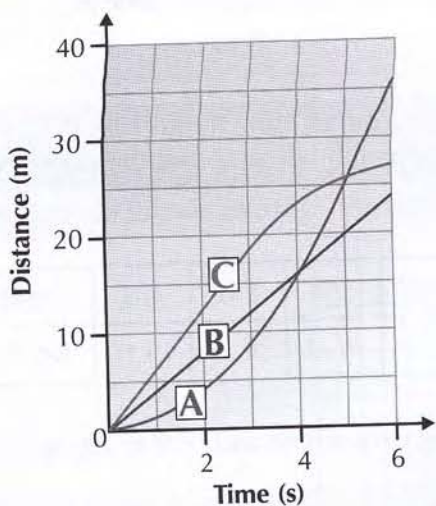
b) Calculate Steve's speed (in m/s) as he walked to training.
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c) Complete the graph to show Steve's run back from his house to training (with his boots).

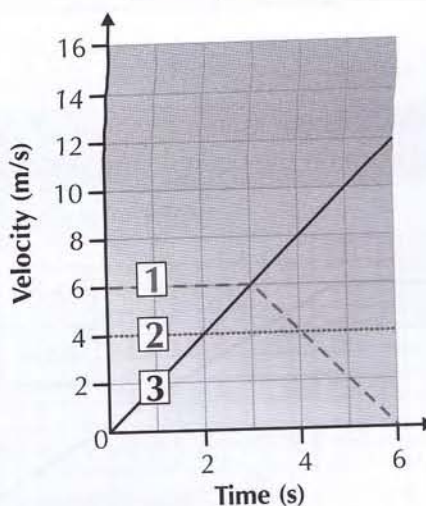
Q2

The distance-time graph and the velocity-time graph below both indicate the **same** three journeys.

Distance-Time Graph



Velocity-Time Graph



Draw lines to show how the distance-time and velocity-time graphs match up.

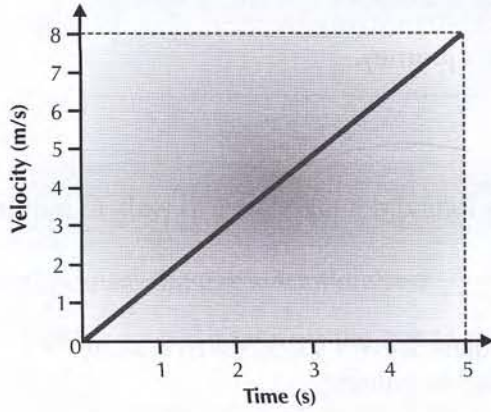
- Line A
- Line B
- Line C

- Line 1
- Line 2
- Line 3

D-T and V-T Graphs

Q3

Below is a velocity-time graph for the descent of a lunar lander. It accelerates due to the pull of gravity from the Moon.



a) Use the graph to calculate the lander's acceleration.

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b) Calculate the distance travelled by the lander during the five seconds of descent shown on the graph.

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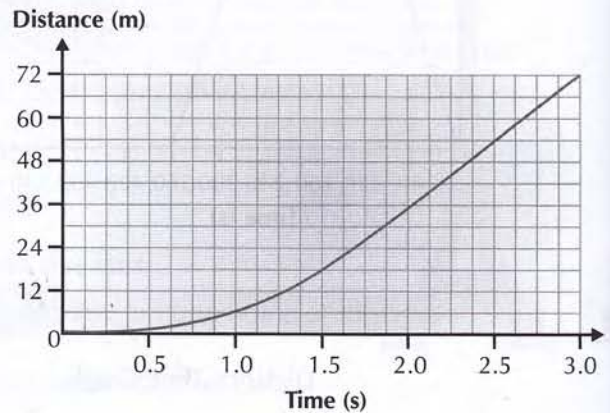
Q4

The speed limit for cars on motorways is 70 mph (about 31 m/s). A motorist was stopped by the police for speeding as she joined the motorway from a service station.

The distance-time graph on the right shows the car's acceleration. The motorist denied speeding. Was she telling the truth?

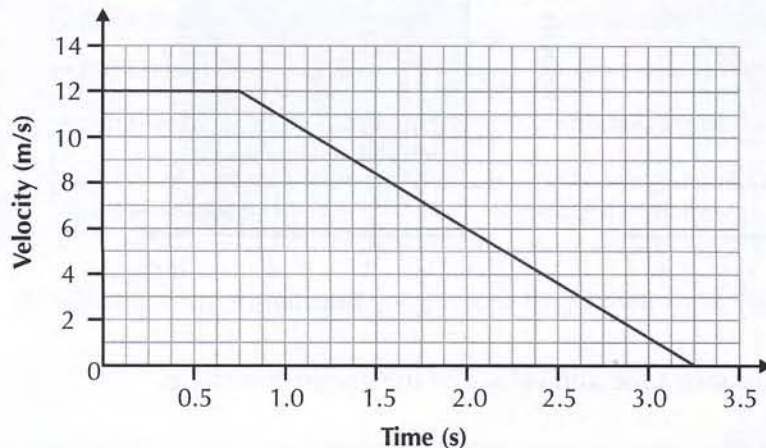
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Q5

A motorist saw a kitten asleep on the road 25 m in front of him. It took him 0.75 seconds to react and slam on the brakes. The velocity-time graph below shows the car's deceleration.



It helps to split the graph up into two smaller shapes.

Use the graph to work out whether the motorist stopped before hitting the kitten.

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