



Name: _____

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Student worksheet

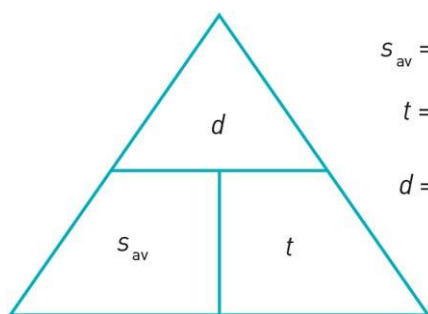
7.2 Velocity is speed with direction

Pages 158–159

Speed and velocity

- 1 Explain in your own words, the difference between speed and velocity.

- 2 Use the formula triangle to identify the following formulas.



$$s_{av} = \frac{d}{t}$$

$$t = \frac{d}{s_{av}}$$

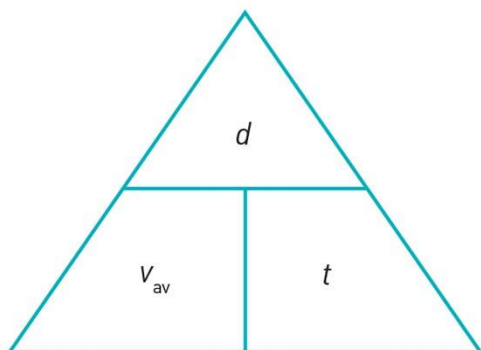
$$d = s_{av} \times t$$

- a Distance

- b Time

- c Average speed

- 3 Use the formula triangle to identify the following formulas.





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a Displacement

b Time

c Average velocity

- 4 In 2009 Usain Bolt set a new world record time of 9.58 seconds for the men's 100 metres. What was his average speed for the race? Give your answer in metres per second.

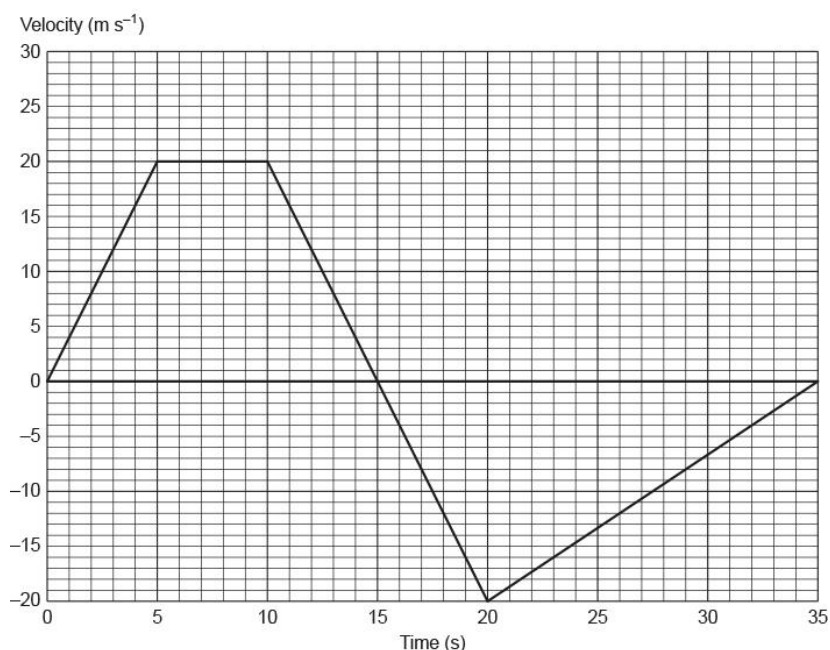
- 5 Kenyan athlete Daniel Komen holds the world record for the men's 3000 metres. If his average speed for the race was 6.81 m s^{-1} , what is his world record time? Give your answer in minutes and seconds.



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- 6 What was the total distance travelled by an object whose velocity–time graph is shown below? Give your answer in metres.



- 7 What was the average speed of an object whose velocity–time graph is shown in Figure 3? Give your answer in metres per second.

Blank area for student answer.



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- 8 What was the final displacement of the object after 35 seconds? Give your answer in metres.

- 9 What was the object's average velocity during the 35 seconds?

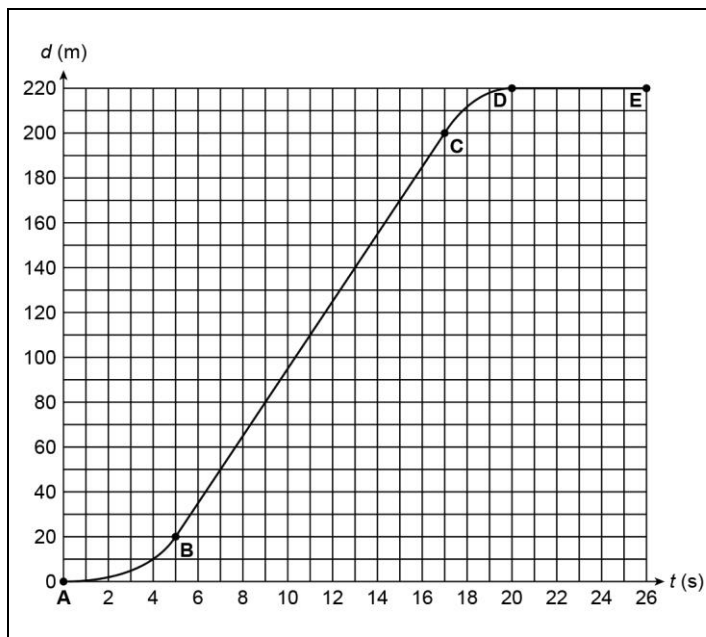


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Extend your understanding

This graph shows the motion of a man riding on a Segway along straight pathway.



- 10 Which of the options, P–S, correctly describes the man's motion in each of the stages AB, BC, CD and DE, as shown by the graph?

	AB	BC	CD	DE
P	Decelerating	Constant speed	Accelerating	Stationary
Q	Accelerating	Stationary	Constant speed	Decelerating
R	Accelerating	Constant speed	Decelerating	Stationary
S	Decelerating	Stationary	Constant speed	Accelerating



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- 11 What was the man's average speed during section AB? Give your answer in metres per second.

- 12 What was the man's speed during section BC? Give your answer in metres per second.