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Examples

Workout

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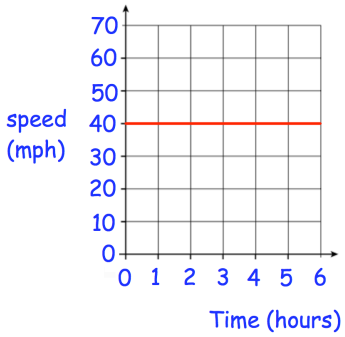
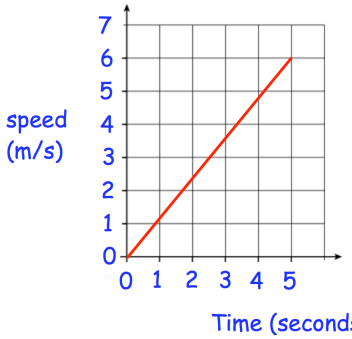
Question 1: Shown below are speed-time graphs for some journeys.
For each journey, calculate the total distance travelled.

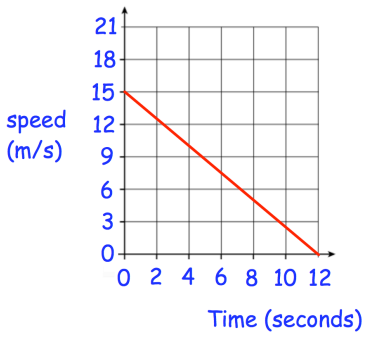
(a)



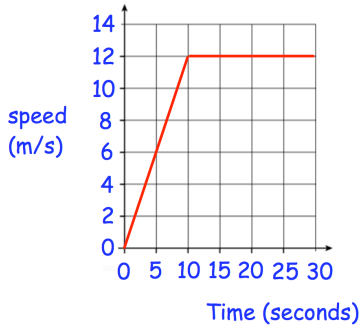
(b)



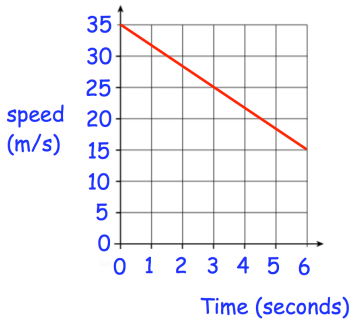
(c)



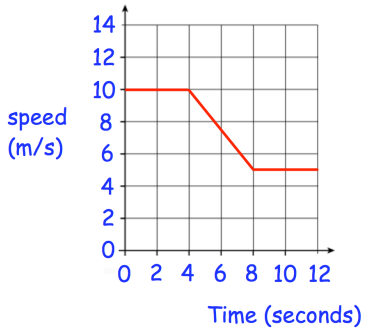
(d)



(e)



(f)



Question 2: Here is the speed-time graph for a car's journey.

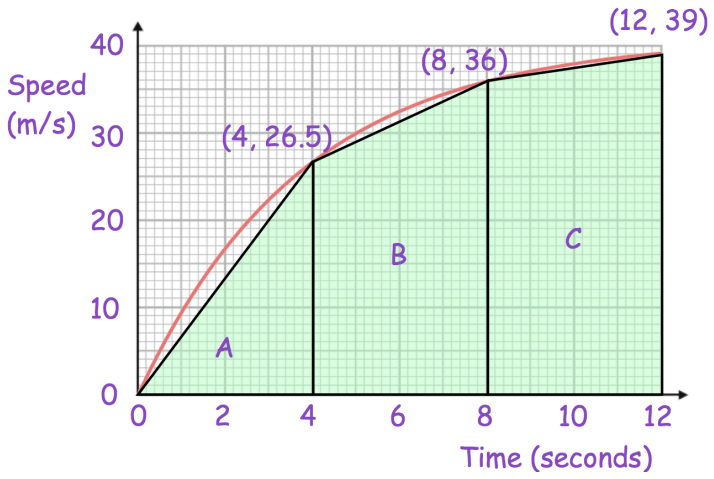
(a) Work out the area of triangle A

(b) Work out the area of trapezium B

(c) Work out the area of trapezium C

(d) Using your answers to (a), (b) and (c) to find an estimate for the total distance travelled by the car.

(e) Is your answer to (d) an overestimate or an underestimate for the distance that the car travelled?



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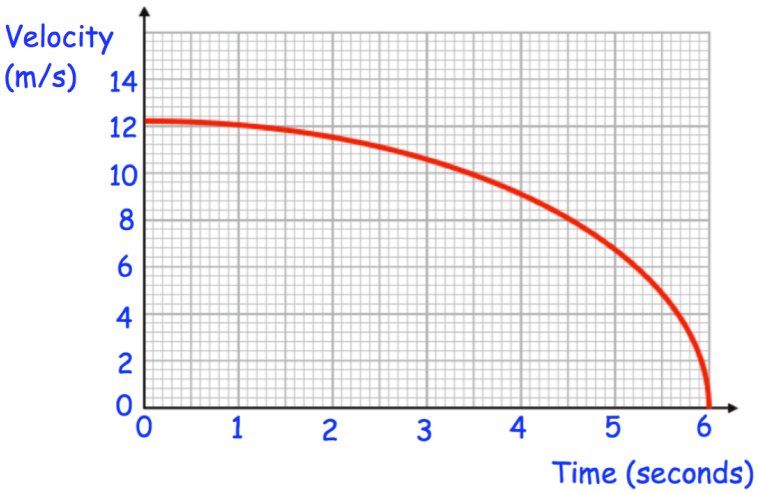
Question 3: Here is a velocity-time graph for 6 seconds of a journey.

(a) Work out an estimate for the distance travelled over 6 seconds. Use 3 strips of equal width.

(b) Is your answer to (a) an overestimate or an underestimate of the actual distance travelled?



Question 4: Here is a speed-time graph for a remote-controlled car

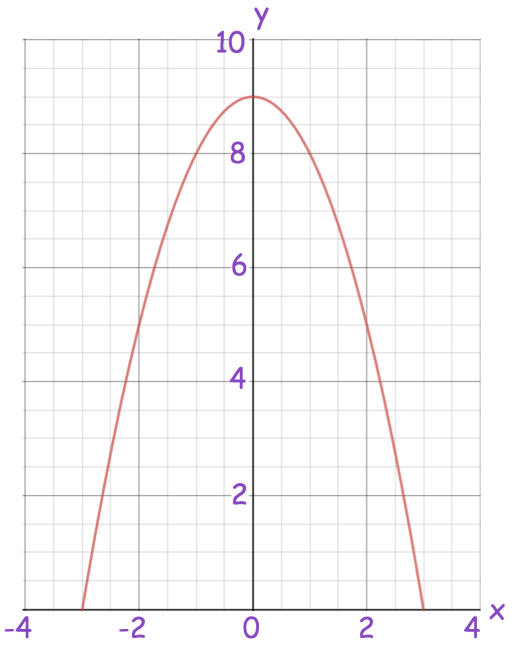
(a) Work out an estimate for the distance travelled over the first 12 seconds of the journey. Use 4 strips of equal width.

(b) Is your answer to (a) an overestimate or an underestimate of the actual distance travelled?

Question 5: Here is a sketch of $y = 9 - x^2$

The graph is used to model the cross section of a tunnel.

Calculate an estimate of the area under the graph.



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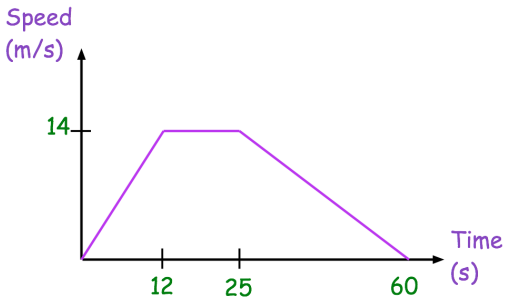
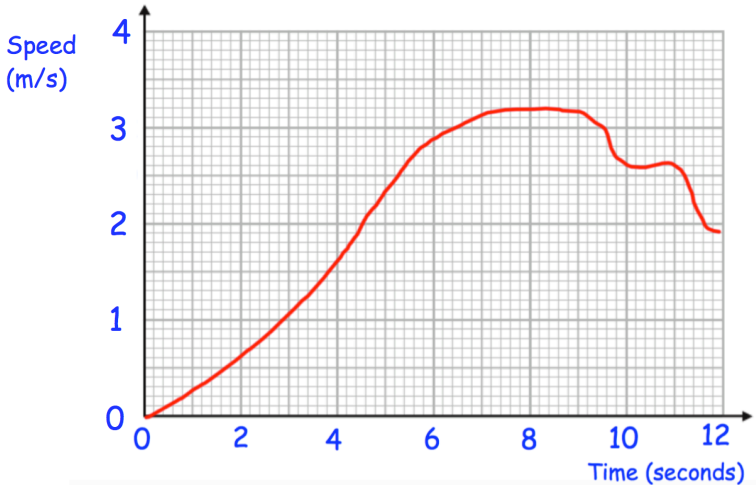
Question 1: The graph shows the speed of a bicycle between two houses.



Calculate the distance between the houses.

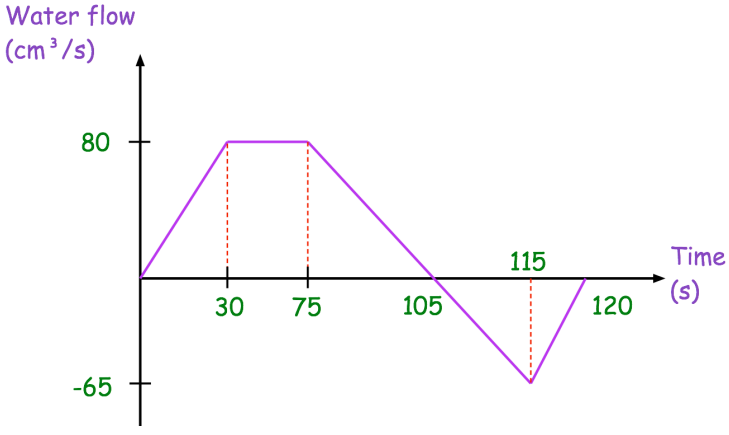
Question 2: Here is a speed-time graph for the first 12 seconds of a journey.



Calculate an estimate for the total distance travelled over the 12 seconds.

Question 3: The graph below shows information on how an empty container is being filled with water.

How much water is in the container after 120 seconds?



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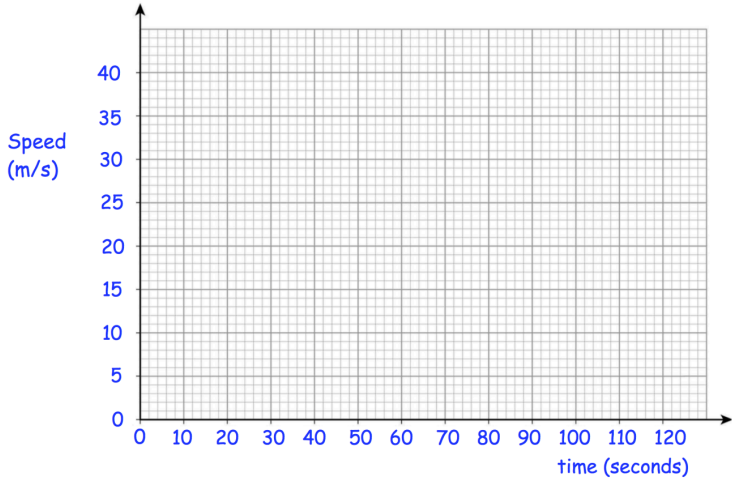
Question 4: Finn is driving his car in a straight line.

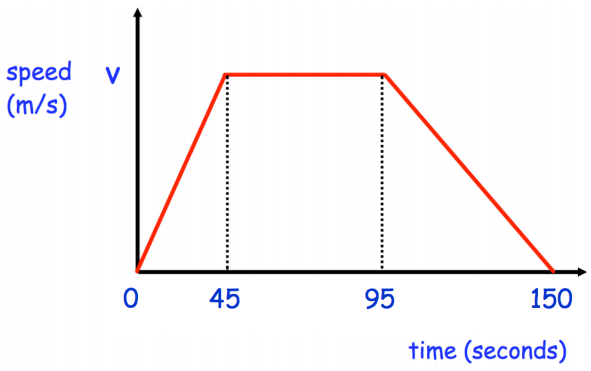
The car begins at rest.
He accelerates uniformly at $2m/s^2$ for 15 seconds.
Finn drives at the same speed for the next 25 seconds.
He then accelerates uniformly to a speed of 40m/s by 80 seconds.
The remainder of the 2 minute journey is spent decelerating to rest.

(a) Draw a speed-time graph for his journey.



(b) Write down the average speed for the total journey.

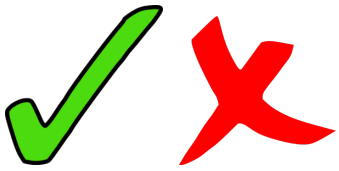
Question 5: Here is a speed-time graph for a train journey.



The journey took 150 seconds.
The train travelled 1.53km in the 150 seconds.

Work out the value of v.

Answers



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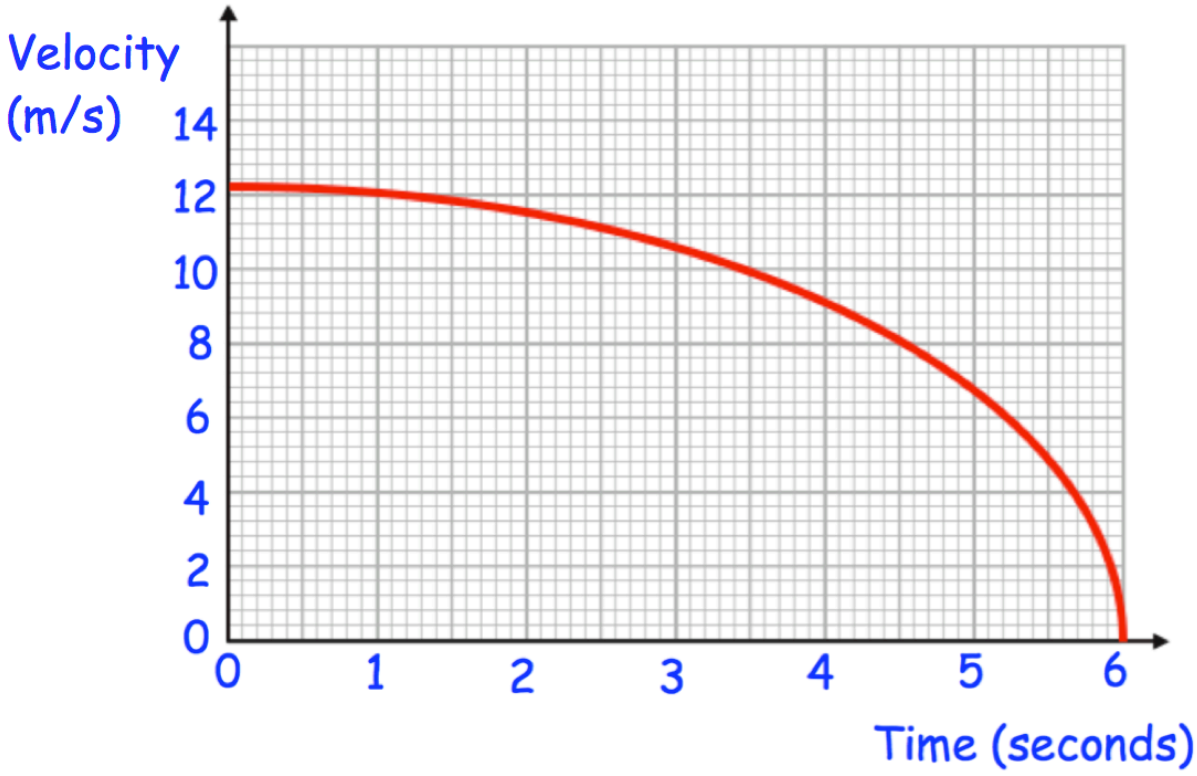
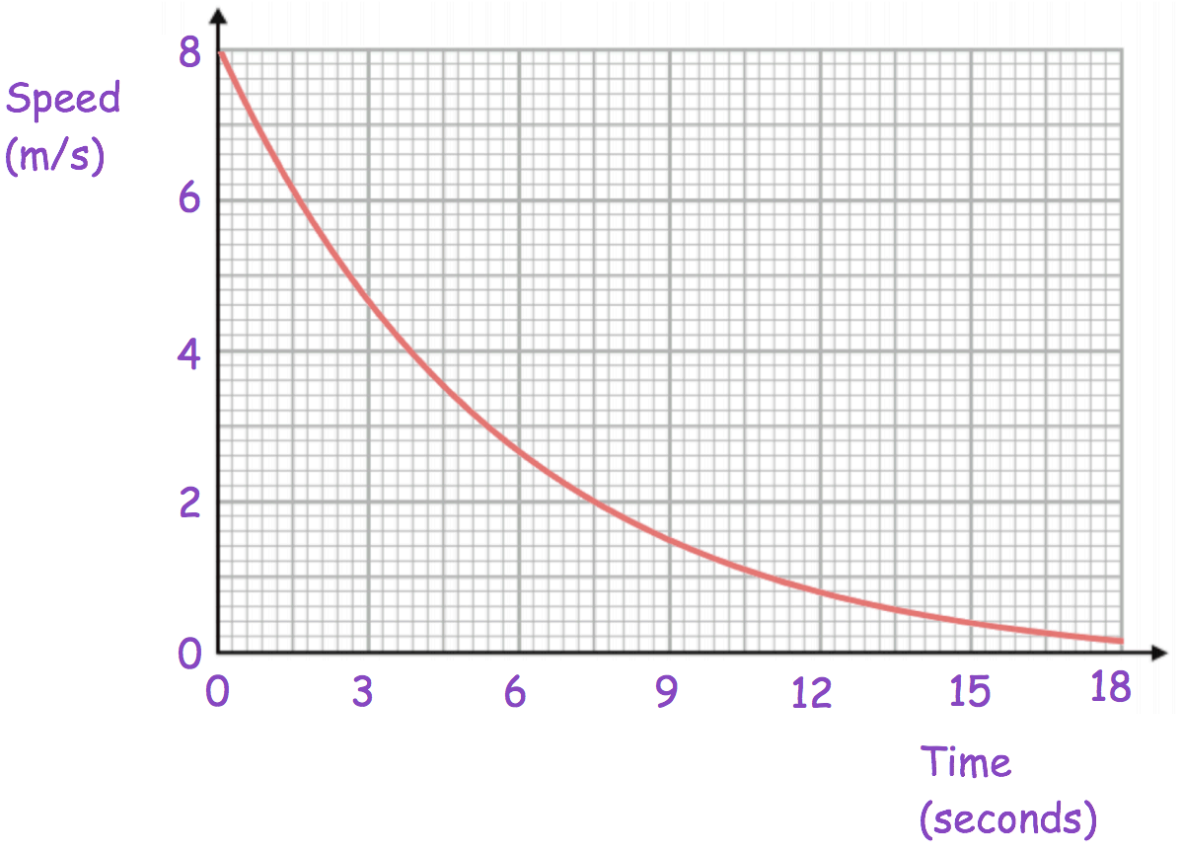
Templates

Question 3:



Question 4:



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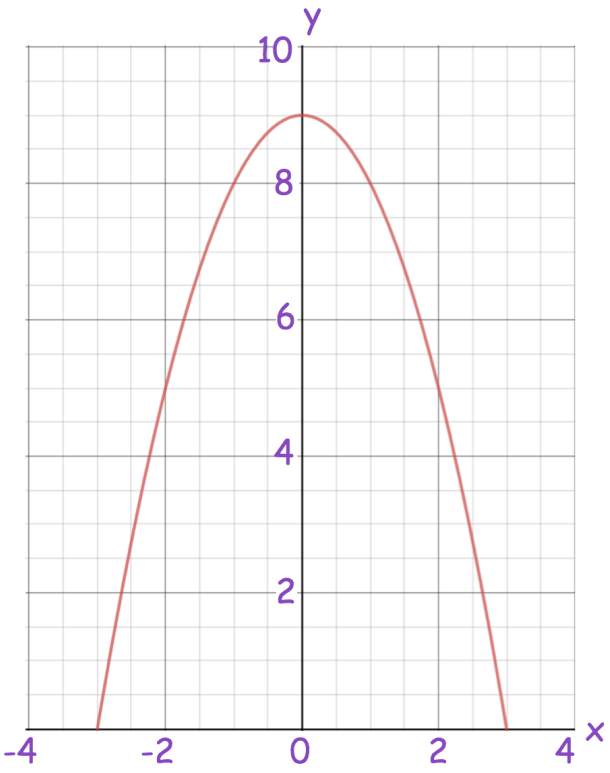
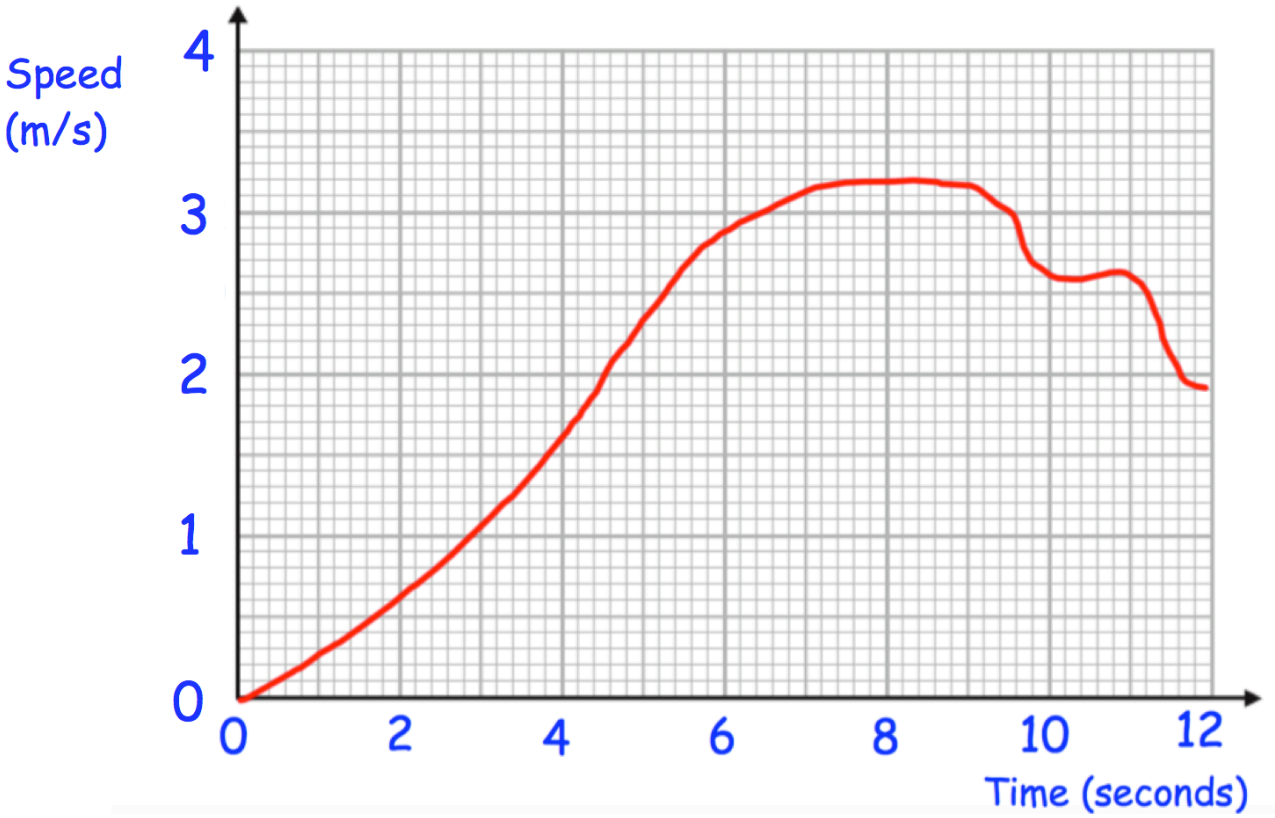
Question 5:



Apply Question 2:



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Apply Question 4: