

Examples

Workout



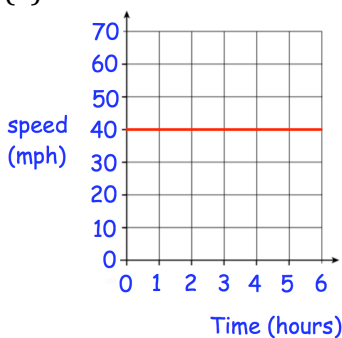
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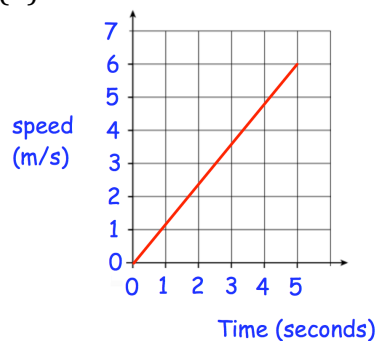
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Question 1: Shown below are speed-time graphs for some journeys.
For each journey, calculate the total distance travelled.

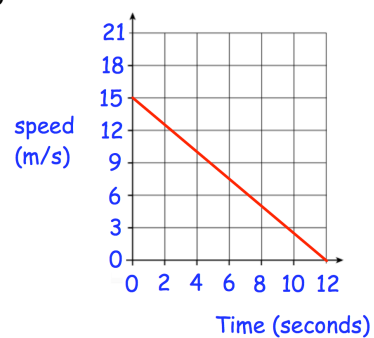
(a)



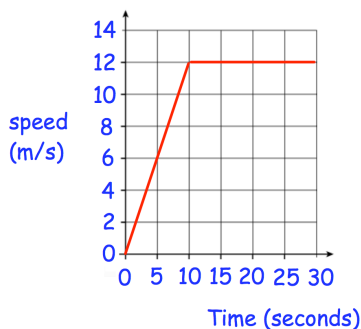
(b)



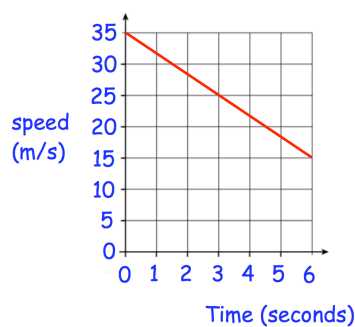
(c)



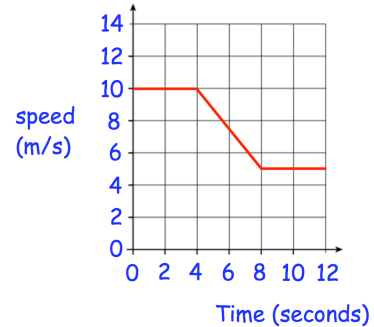
(d)



(e)

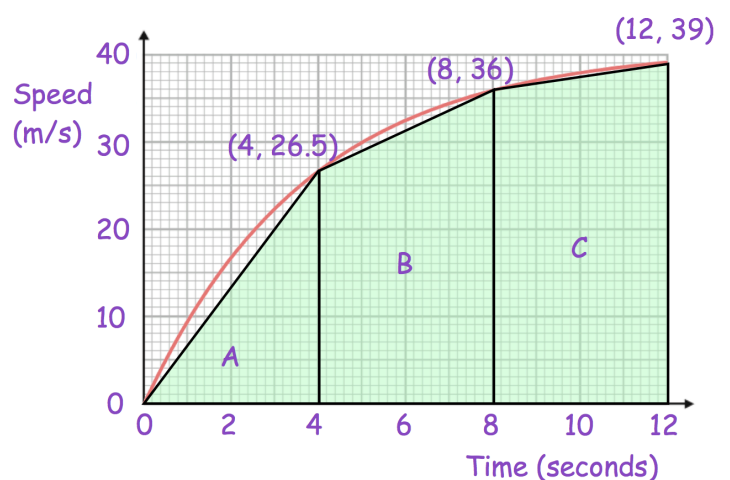


(f)



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

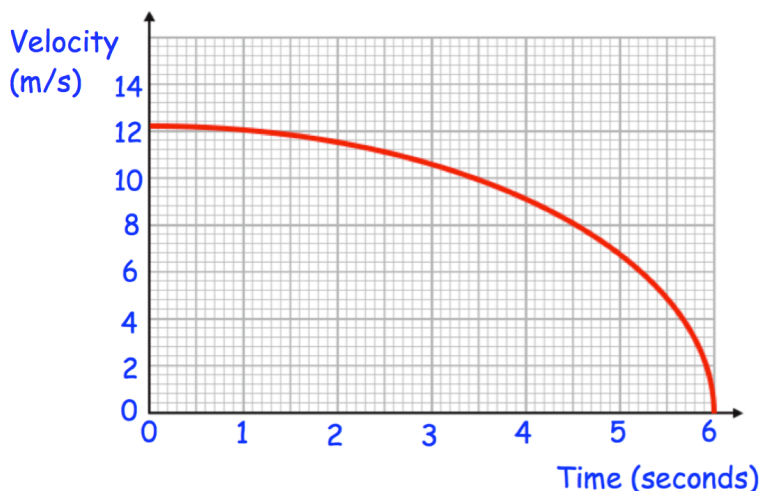
- Work out the area of triangle A
- Work out the area of trapezium B
- Work out the area of trapezium C
- Using your answers to (a), (b) and (c) to find an estimate for the total distance travelled by the car.
- Is your answer to (d) an overestimate or an underestimate for the distance that the car travelled?



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.

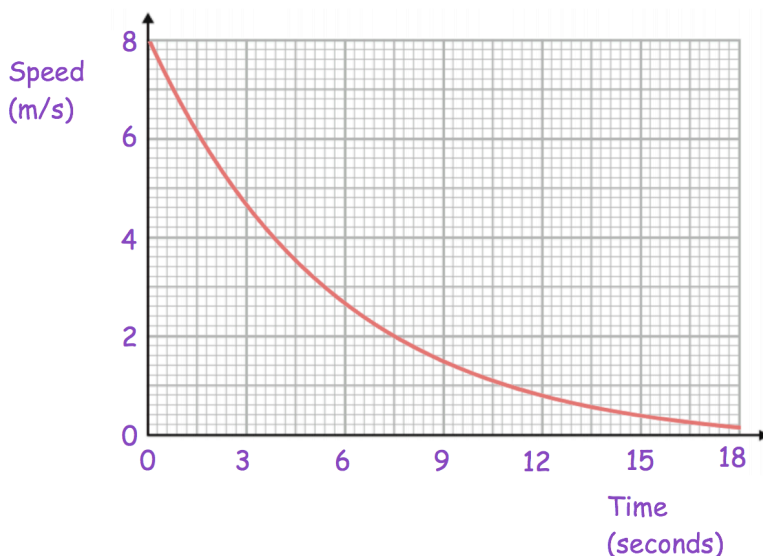
(b) Is your answer to (a) an overestimate or an underestimate of the actual distance travelled?



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.

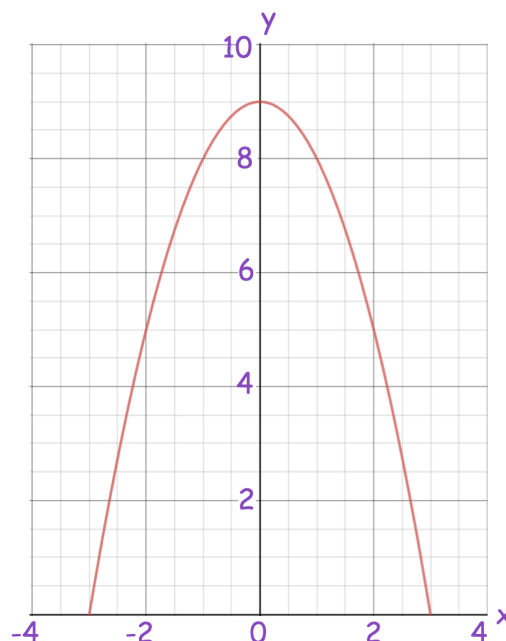
(b) Is your answer to (a) an overestimate or an underestimate of the actual distance travelled?



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

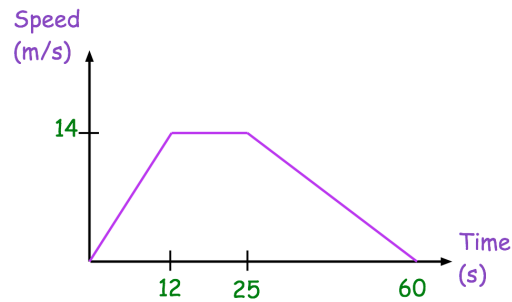
The graph is used to model the cross section of a tunnel.

Calculate an estimate of the area under the graph.



Apply

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



Calculate the distance between the houses.

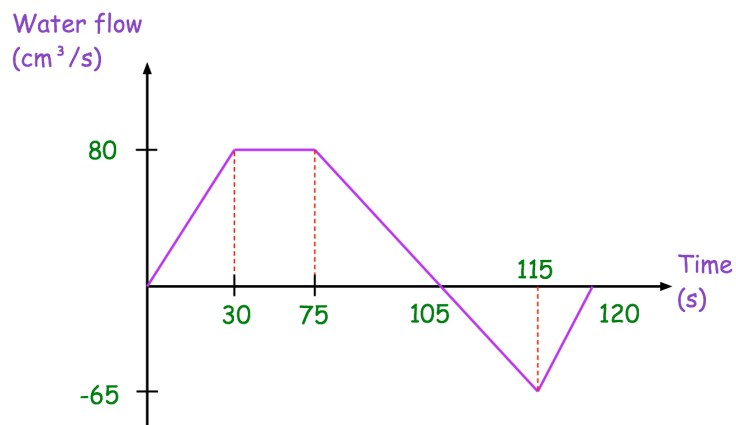
Question 2: Here is a speed-time graph for the first 12 seconds of a journey.



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?



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

The car begins at rest.

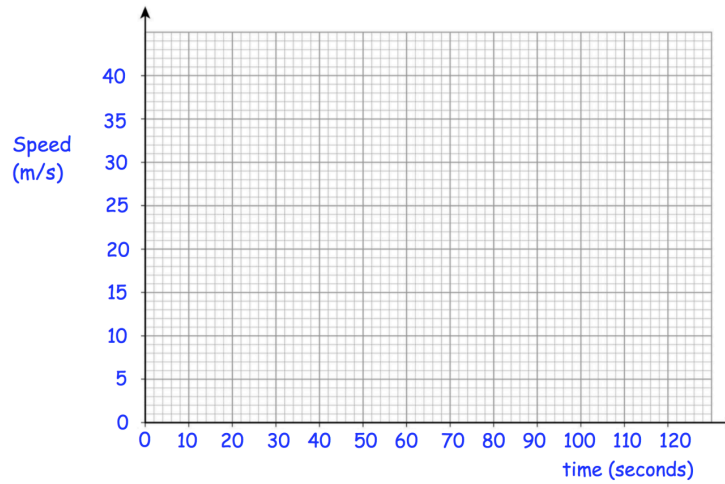
He accelerates uniformly at 2m/s^2 for 15 seconds.

Finn drives at the same speed for the next 25 seconds.

He then accelerates uniformly to a speed of 40m/s by 80 seconds.

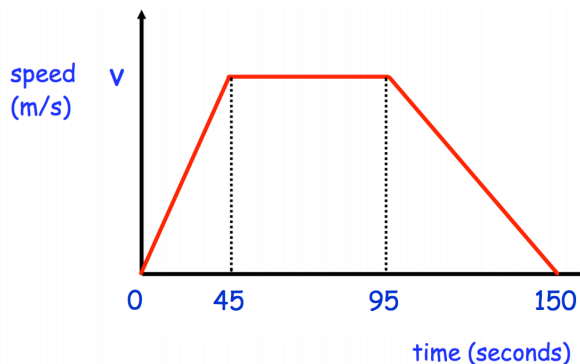
The remainder of the 2 minute journey is spent decelerating to rest.

(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.

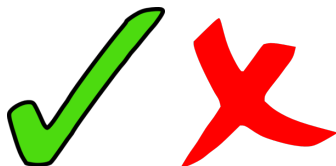


The journey took 150 seconds.

The train travelled 1.53km in the 150 seconds.

Work out the value of v .

Answers



Click here

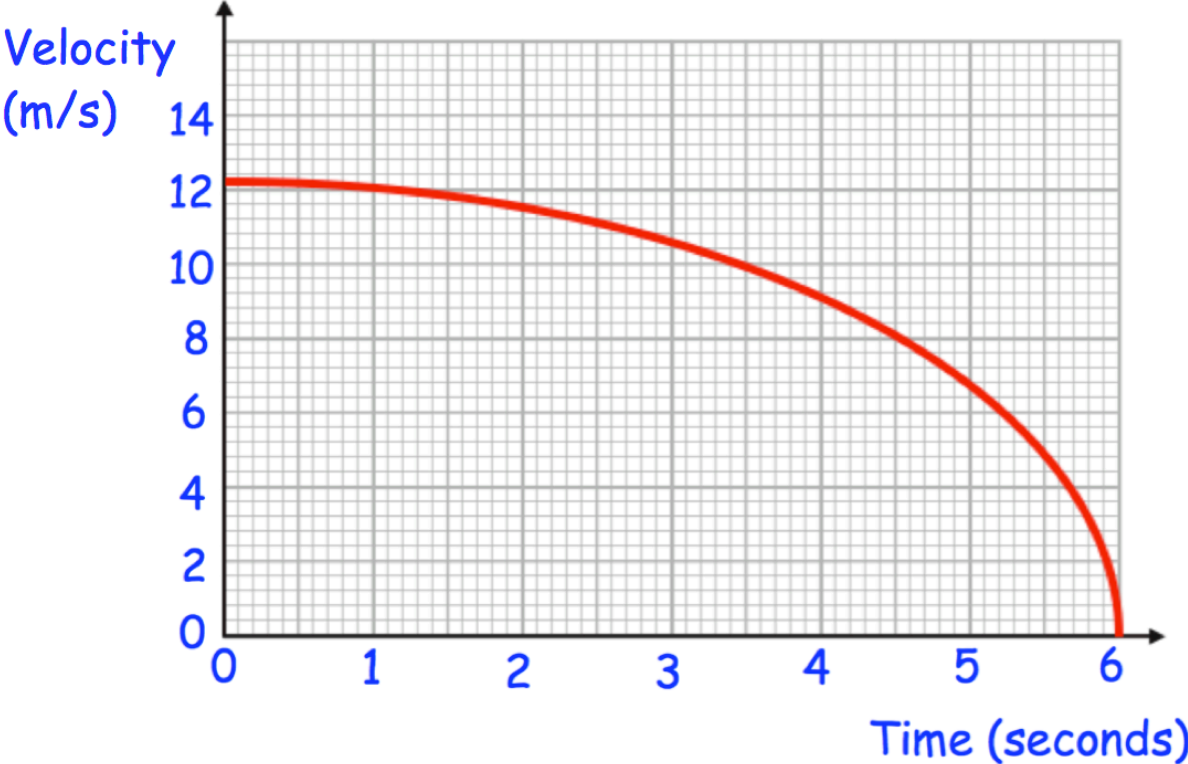


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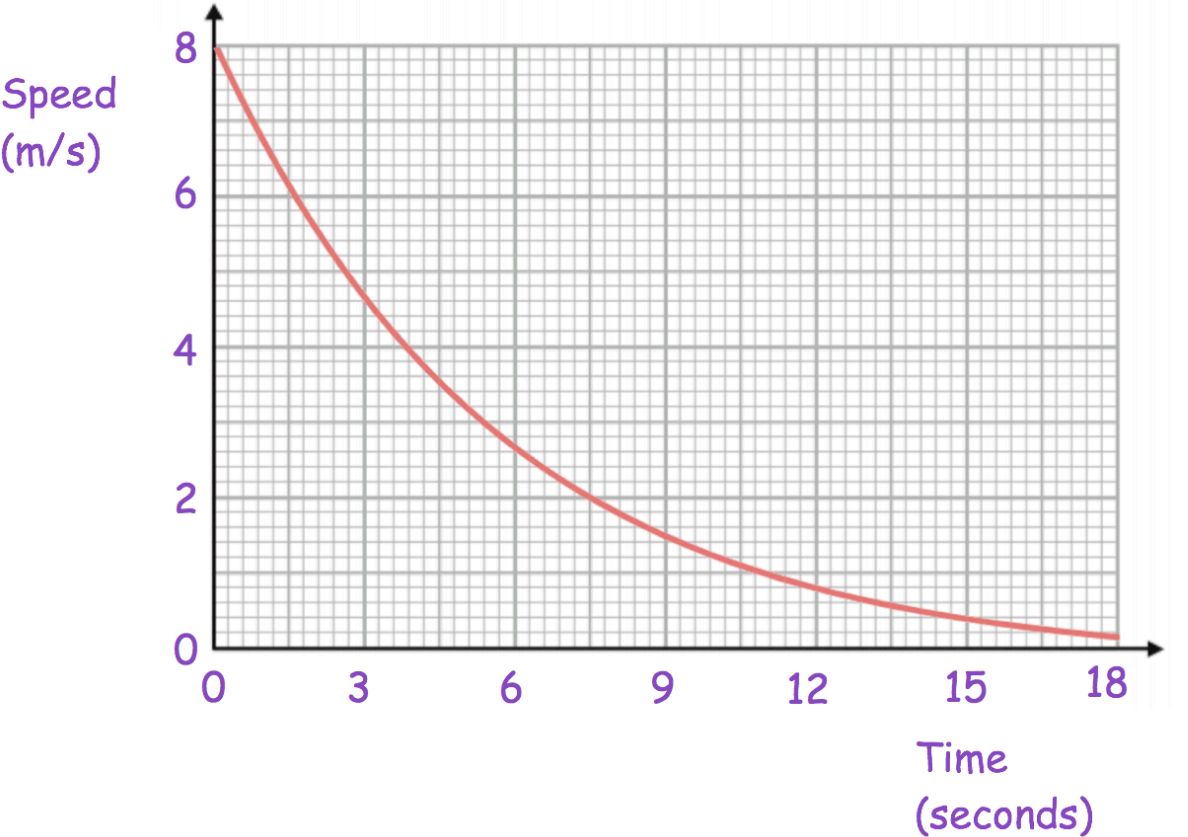
Area under a Graph
Video 389 on www.corbettmaths.com

Templates

Question 3:



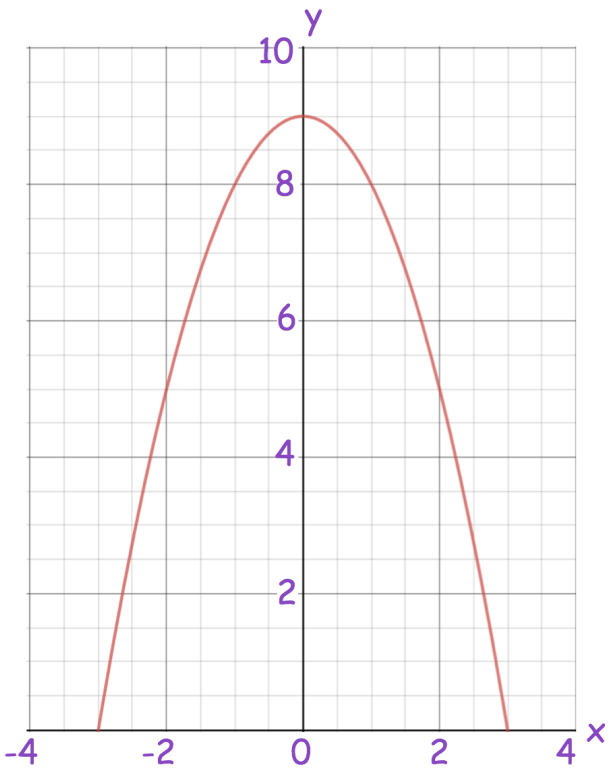
Question 4:



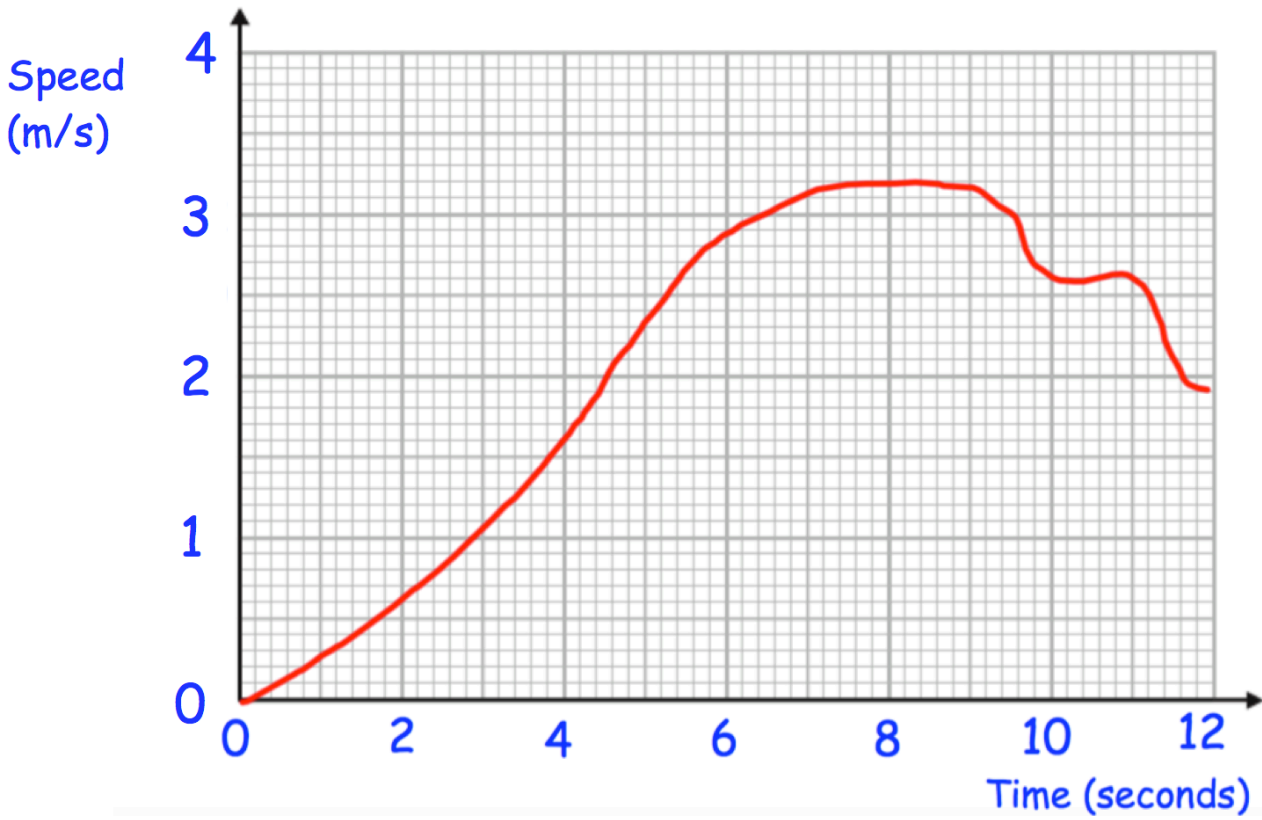
Area under a Graph

Video 389 on www.corbettmaths.com

Question 5:



Apply Question 2:



Area under a Graph
Video 389 on www.corbettmaths.com

Apply Question 4:

