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?
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.
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 $2\text{m/s}^2$ for 15 seconds.
Finn drives at the same speed for the next 25 seconds.
He then accelerates uniformly to a speed of $40\text{m/s}$ 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 $v$. 
Question 3:

![Velocity-time graph](https://www.corbettmaths.com)

Question 4:

![Speed-time graph](https://www.corbettmaths.com)
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: