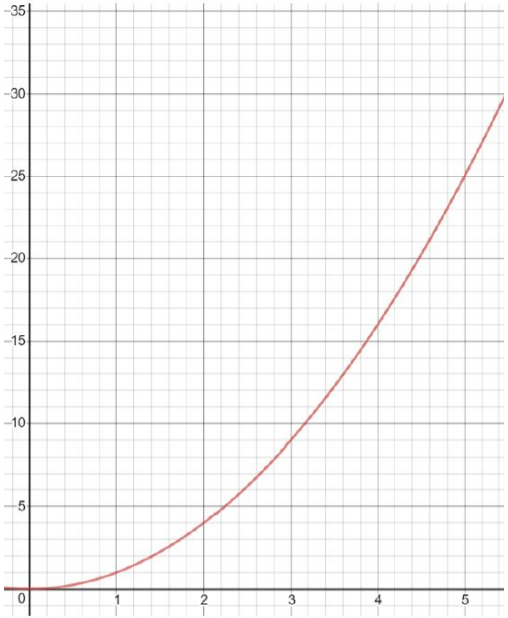
Estimate the area under a curve

Maths

Mr Clasper

Estimate the area under a curve

1. Here is the graph of $y = x^2$



a) Using 1 strip, estimate the area under the curve between x = 1 and x = 5

b) Using 2 strips, estimate the area under the curve between x = 1 and x = 5

c) Using 3 strips, estimate the area under the curve between x = 1 and x = 5

d) Do you think your answers are over-estimates or under-estimates? Explain your answer.

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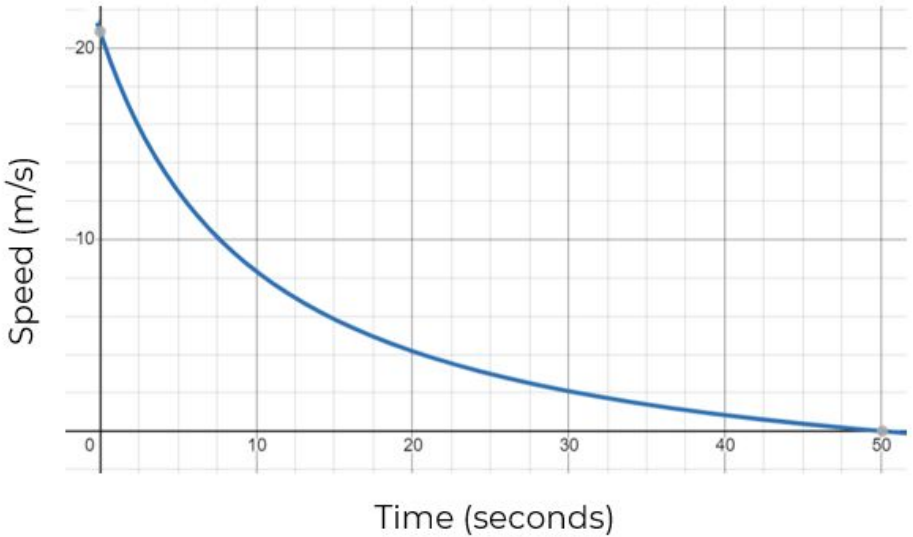
2. A train passes through a signal at time t = 0 and starts to slow down.

It comes to stop at a station 50 seconds later.

The graph opposite shows the train's speed as it approaches the station.

Estimate how far is it between the station and the signal.



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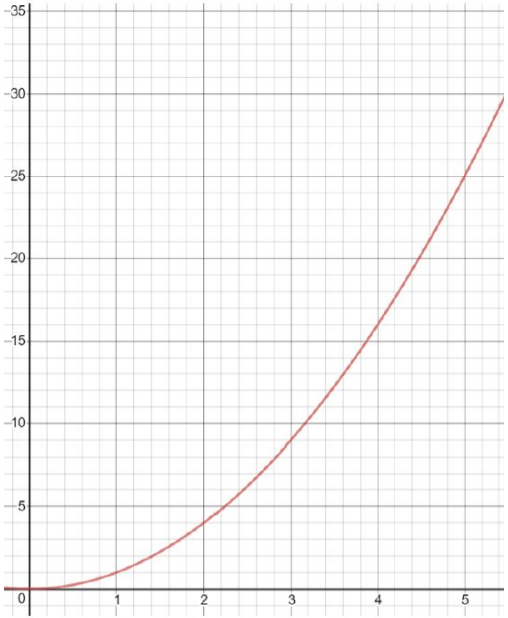
Answers

Estimate the area under a curve

1. Here is the graph of $y = x^2$



a) Using 1 strip, estimate the area under the curve between x = 1 and x = 5

52 units^2

b) Using 2 strips, estimate the area under the curve between x = 1 and x = 5

44 units^2

c) Using 3 strips, estimate the area under the curve between x = 1 and x = 5

42 units^2

d) Do you think your answers are over-estimates or under-estimates? Explain your answer.

Overestimate. The area of the trapeziums are partially above the curve.

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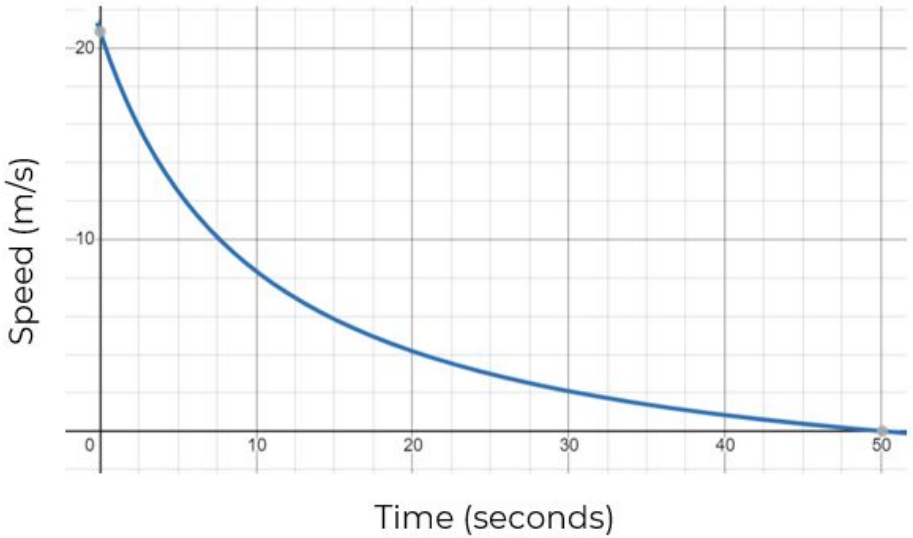

Approximately 265 metres

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