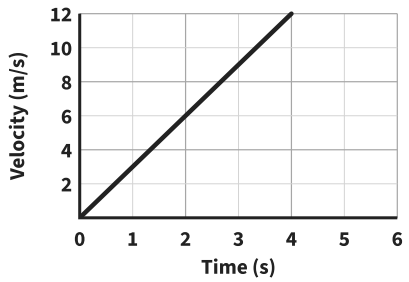
Area under a graph

ANSWERS

1

Find the distance travelled.

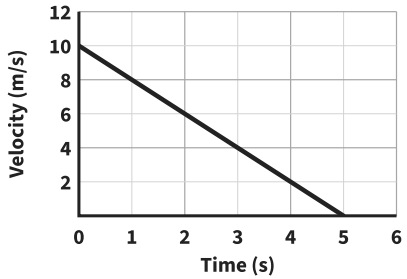


½ × 4 × 12 = 24

Distance 24 m

2

A car slows down to a stop.
Find the distance travelled.

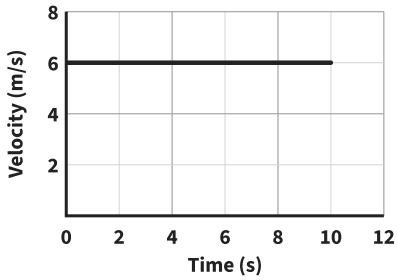


½ × 5 × 10 = 25

Distance 25 m

3 *Notice the change!*

Find the distance travelled.

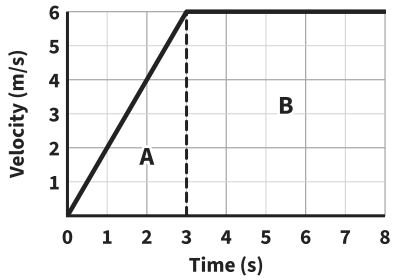


10 × 6 = 60

Distance 60 m

4

Find the distance travelled.



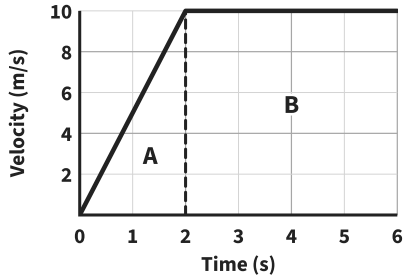
A = ½ × 3 × 6 = 9

B = 5 × 6 = 30

Distance 39 m

5

Find the distance travelled.



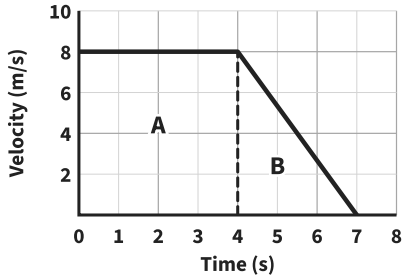
A = ½ × 2 × 10 = 10

B = 4 × 10 = 40

Distance 50 m

6

Find the distance travelled.



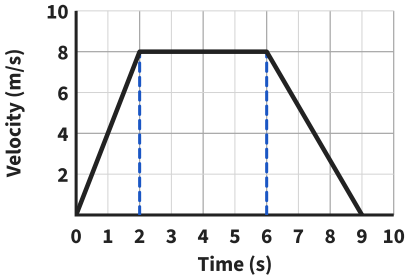
A = 4 × 8 = 32

B = ½ × 3 × 8 = 12

Distance 44 m

7

Find the distance travelled.



½ × 2 × 8 = 8

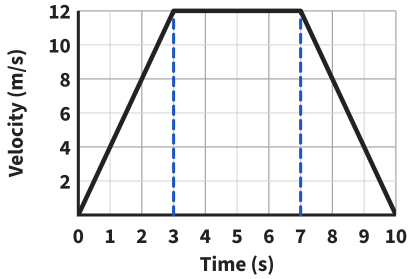
4 × 8 = 32

½ × 3 × 8 = 12

Distance 52 m

8

Sam says the distance is 10 × 12 = 120 m.
Explain his mistake and find the distance.



not a rectangle: the ends are triangles

18 + 48 + 18

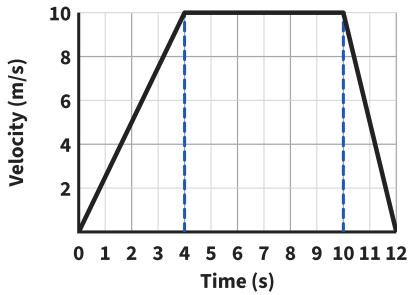
Distance 84 m

Area under a graph *further practice*

ANSWERS

9

Find the distance travelled.



20 + 60 + 10

Distance 90 m

10

A car speeds up steadily from rest to 12 m/s in 5 seconds. How far does it travel?

½ × 5 × 12

Distance 30 m

11

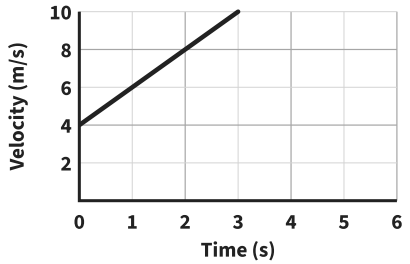
A bus speeds up steadily from rest to 8 m/s in 4 seconds. It stays at 8 m/s for 10 seconds, then slows down steadily and stops 2 seconds later. How far does it travel?

16 + 80 + 8

Distance 104 m

12

A runner speeds up from 4 m/s to 10 m/s. Find the distance she travels in the 3 seconds.



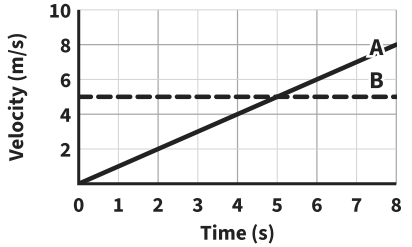
rectangle 3 × 4 = 12

triangle ½ × 3 × 6 = 9

Distance 21 m

13

Cyclist A speeds up steadily from rest.
Cyclist B rides at a steady speed.
Who goes further in the 8 seconds, and by how much?



A: ½ × 8 × 8 = 32

B: 8 × 5 = 40

Answer B, by 8 m

14

A train speeds up steadily from rest for 4 seconds. Then it travels at that speed for 6 seconds. It travels 96 m.
Find its top speed.

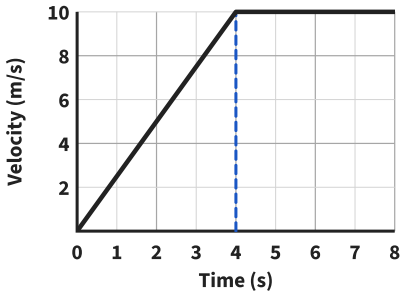
½ × 4 × v + 6 × v = 96

8v = 96

Speed 12 m/s

15

Find the average speed over the 8 seconds.



20 + 40 = 60 m

60 ÷ 8

Speed 7.5 m/s

16

Mo says a car at a steady 20 m/s for 10 seconds goes further than a car that speeds up steadily from rest to 40 m/s in 10 seconds. Is Mo right?
Show how you know.

10 × 20 = 200

½ × 10 × 40 = 200

Answer No: both 200 m