

Distance Time Graphs: Calculating Speed

For the following graphs, you are now going to incorporate calculating speed.

To calculate: $speed = \frac{distance}{time}$

Hint: on a graph, speed is the same as slope!

1. This graph models Jessica's bike trip to the store, after leaving home.

a. Calculate the speed she was travelling between points A and B.

$\frac{2}{5}$ km/min or 0.4 km/min

b. What was her speed between B and C?

0 km/min

c. What was her speed between C and D?

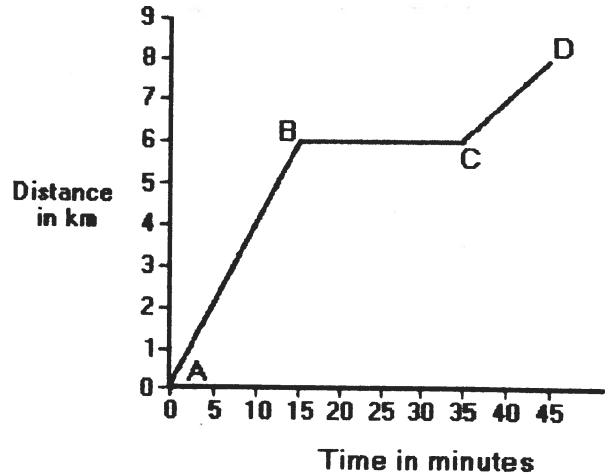
$\frac{1}{5}$ km/min or 0.2 km/min

d. She stopped to grab a bite to eat 15 minutes into her ride. How far from home was she?

6 km

e. What is the distance between home and the store?

8 km



2. This graph shows Francesco's walk to home from his car.

a. When was he travelling the fastest? What speed was he travelling?

From 0-1s & 4-5s

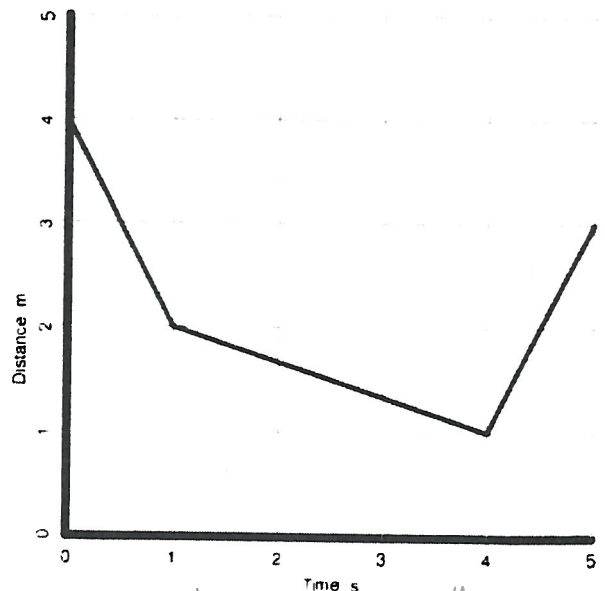
2 m/s

b. After 5 seconds, did he make it home? Explain.

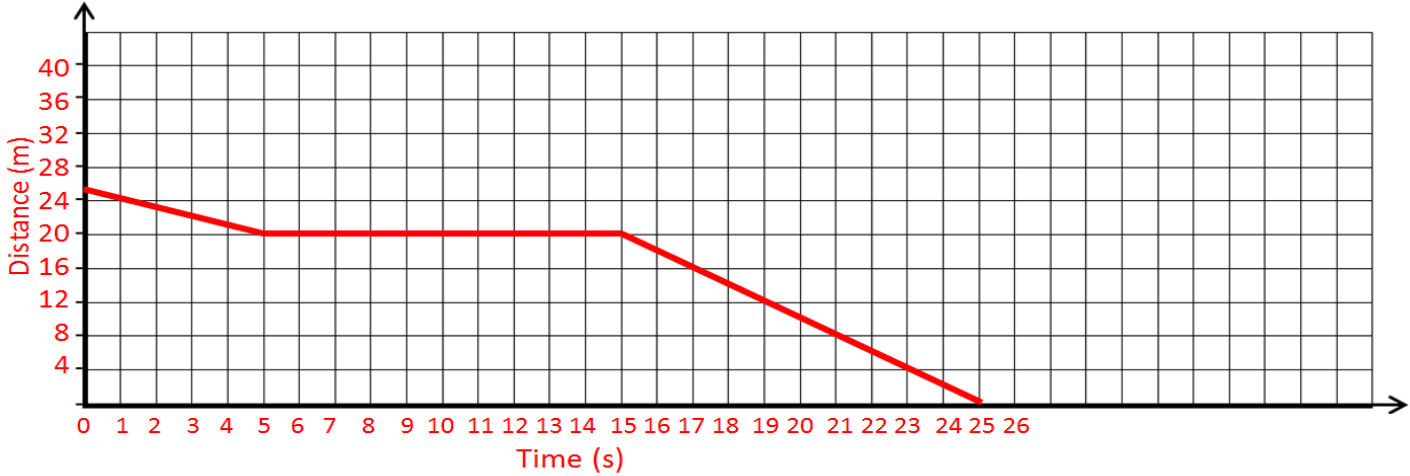
No. He did not reach distance 0.

c. Create a story that could match this graph.

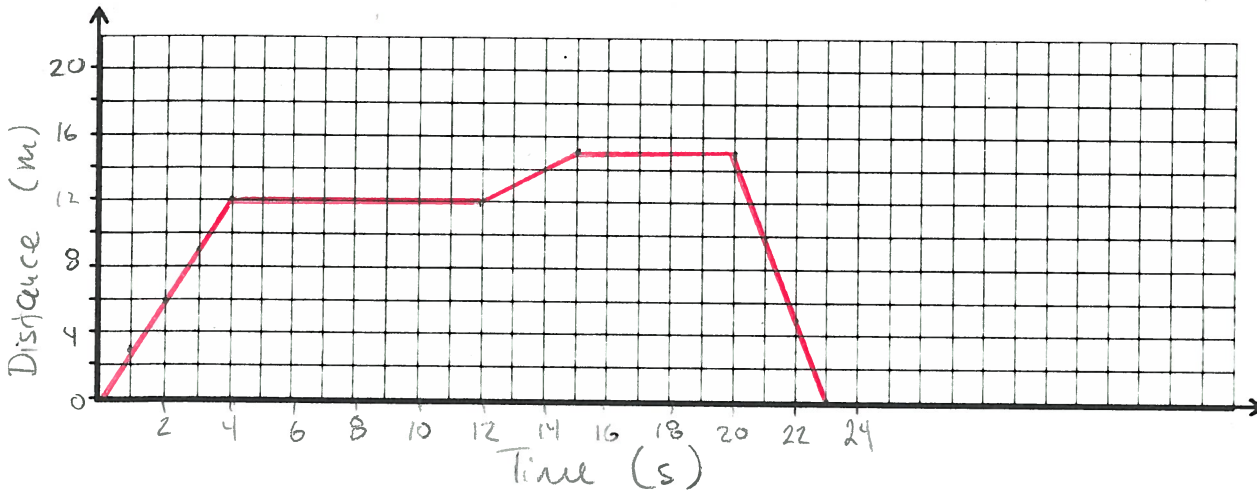
Francesco left his car that was 4m away from home, and headed home. He walked 2m/s for 1 second, then slowed to $\frac{1}{3}$ m/s for another 3 seconds. He then turned around and walked away from home for 1 second, at 2m/s.



3. Ak is walking towards home. He starts 25m away. He walks at a speed of 1m/sec for 5 seconds, stops for 10 seconds to tie his shoe, and then keeps moving towards home at a speed of 2m/sec. Draw Ak's distance time graph.



4. Kristina leaves home to go to the mailbox. She walks at a steady speed of 3m/sec. After 4 seconds, she stops for 8 seconds to let a car pass. She then continues to the mailbox at 1m/second. The mailbox is 15m away. It takes her 5 seconds to get the mail. She then turns around and runs home at a speed of 5m/second. Draw Kristina's distance time graph.



5. Matthew gets in his car and leaves home. His car accelerates for 20 seconds, then he drives at a constant speed for 30 seconds. He then decelerates for 15 seconds, bringing him to a stop. Draw a distance time graph showing Matthew's movements.

