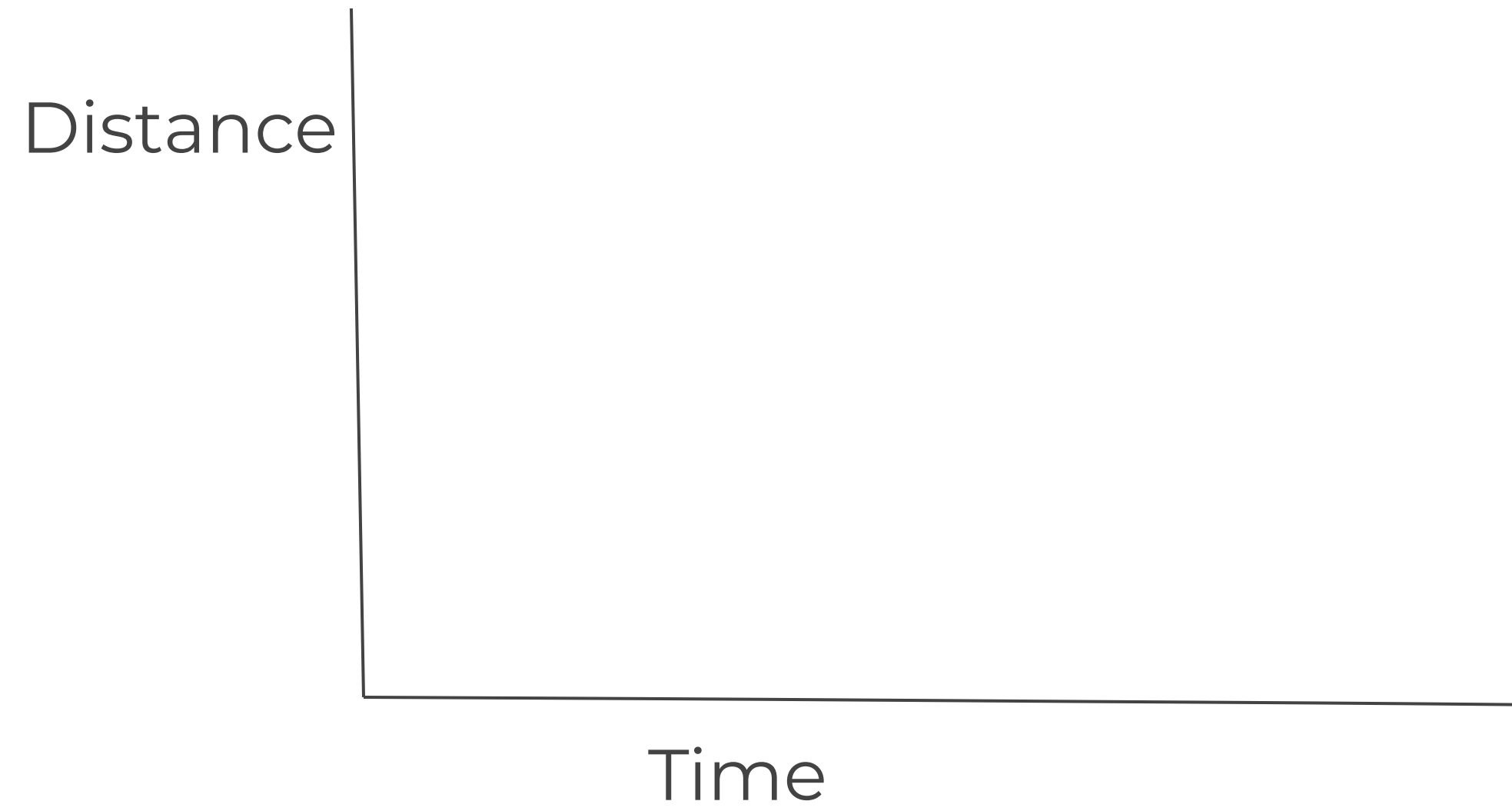# Lesson 11 - Distance-Time Graphs

Physics - KS3

Forces and Motion

Mrs Wolstenholme
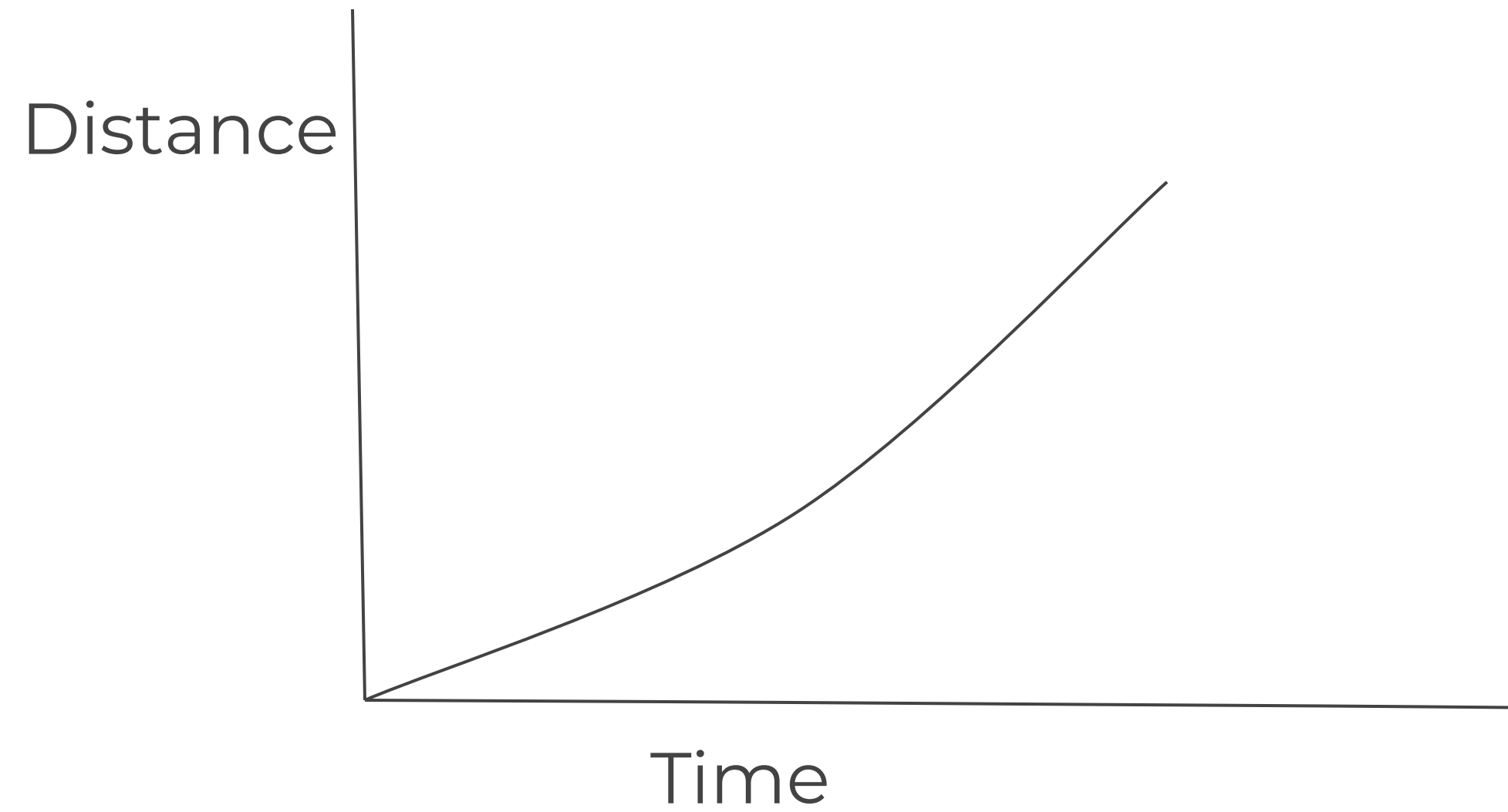
Distance

Time

2

?

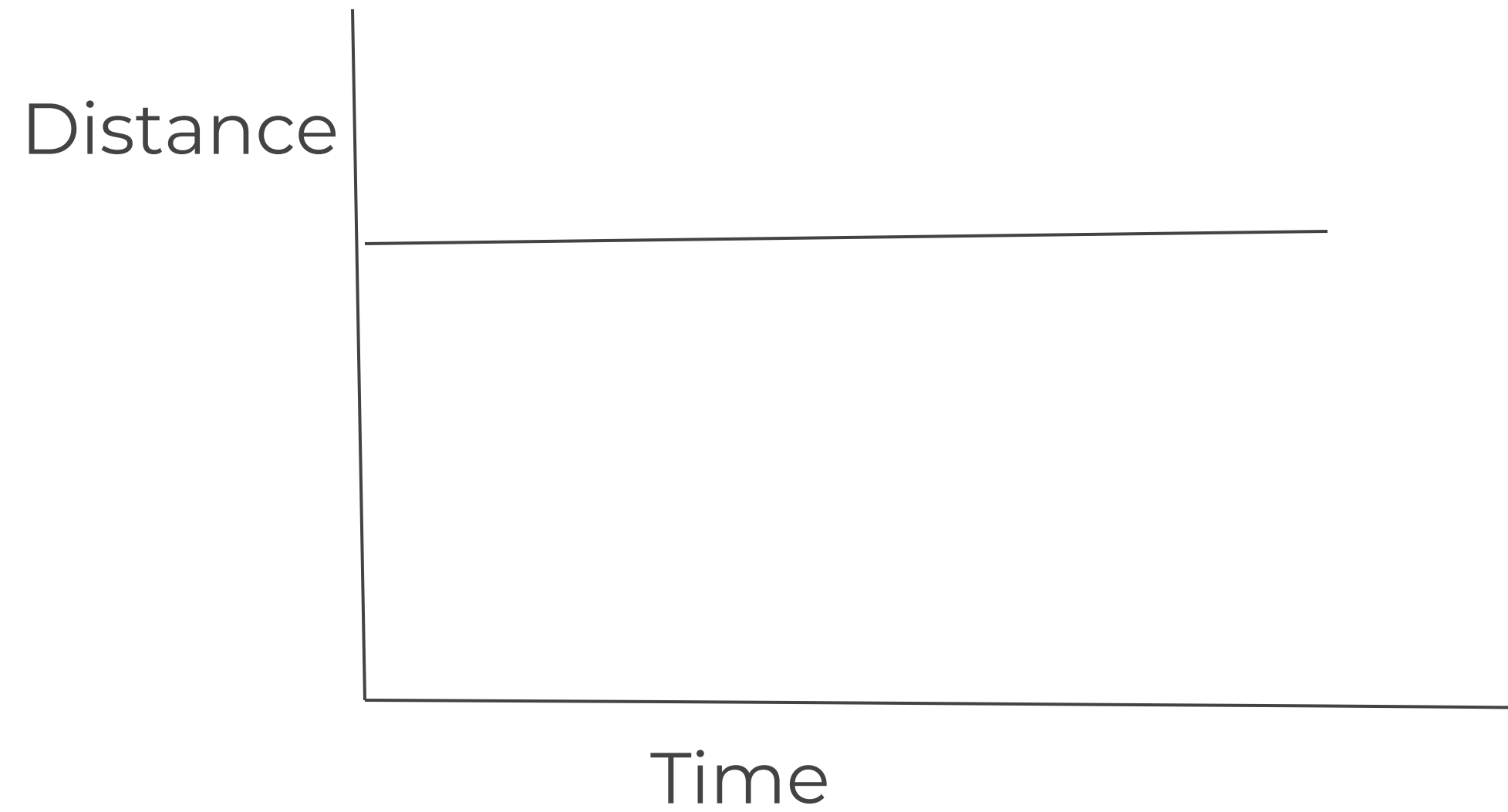?

Constant speed

At rest

-> Accelerating
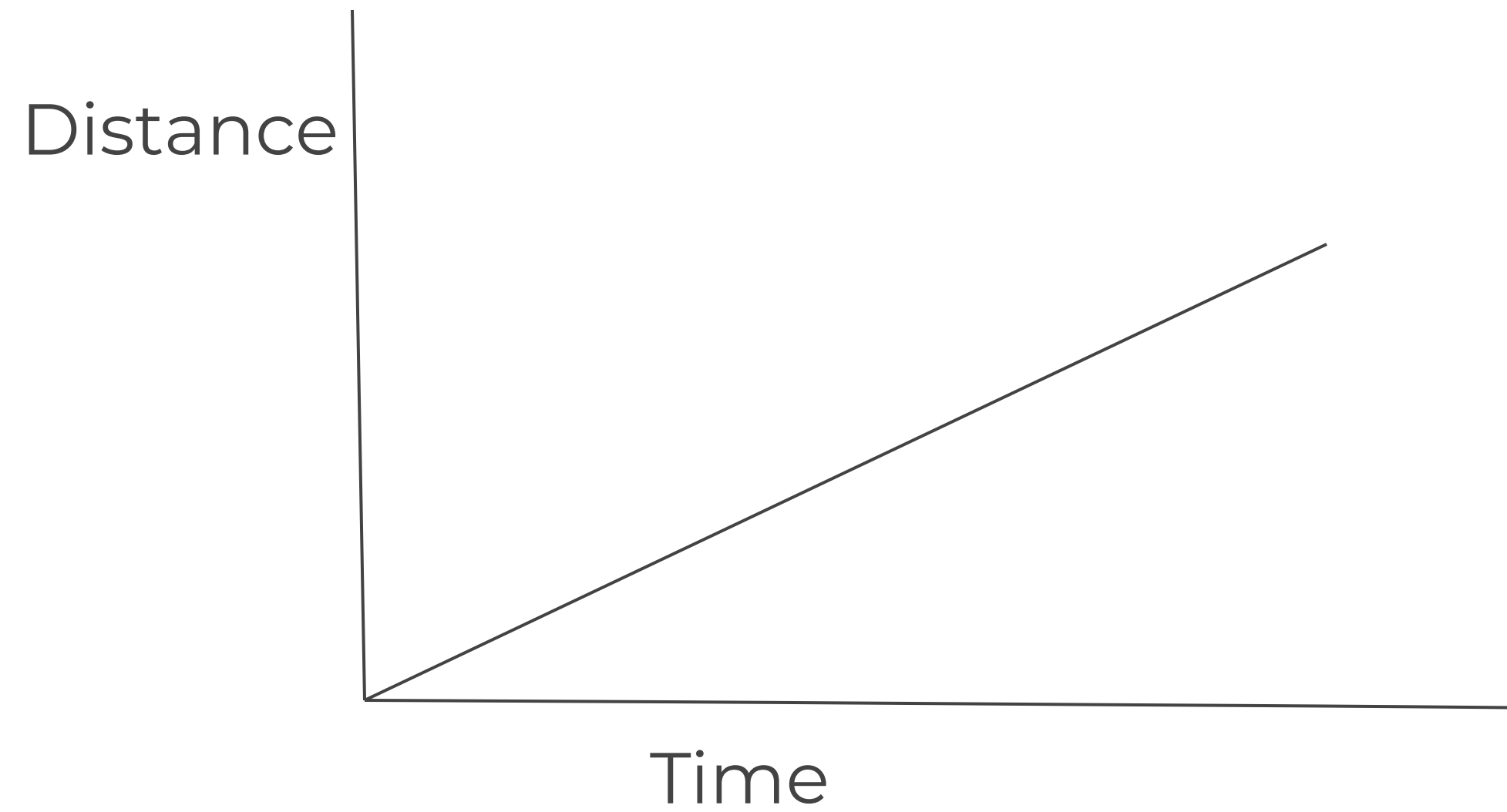

Distance

Time

Constant speed

At rest

-> Accelerating

Distance

Time

Constant speed

At rest

-> Accelerating

Distance

Time

Complete the task

Distance Time Graphs
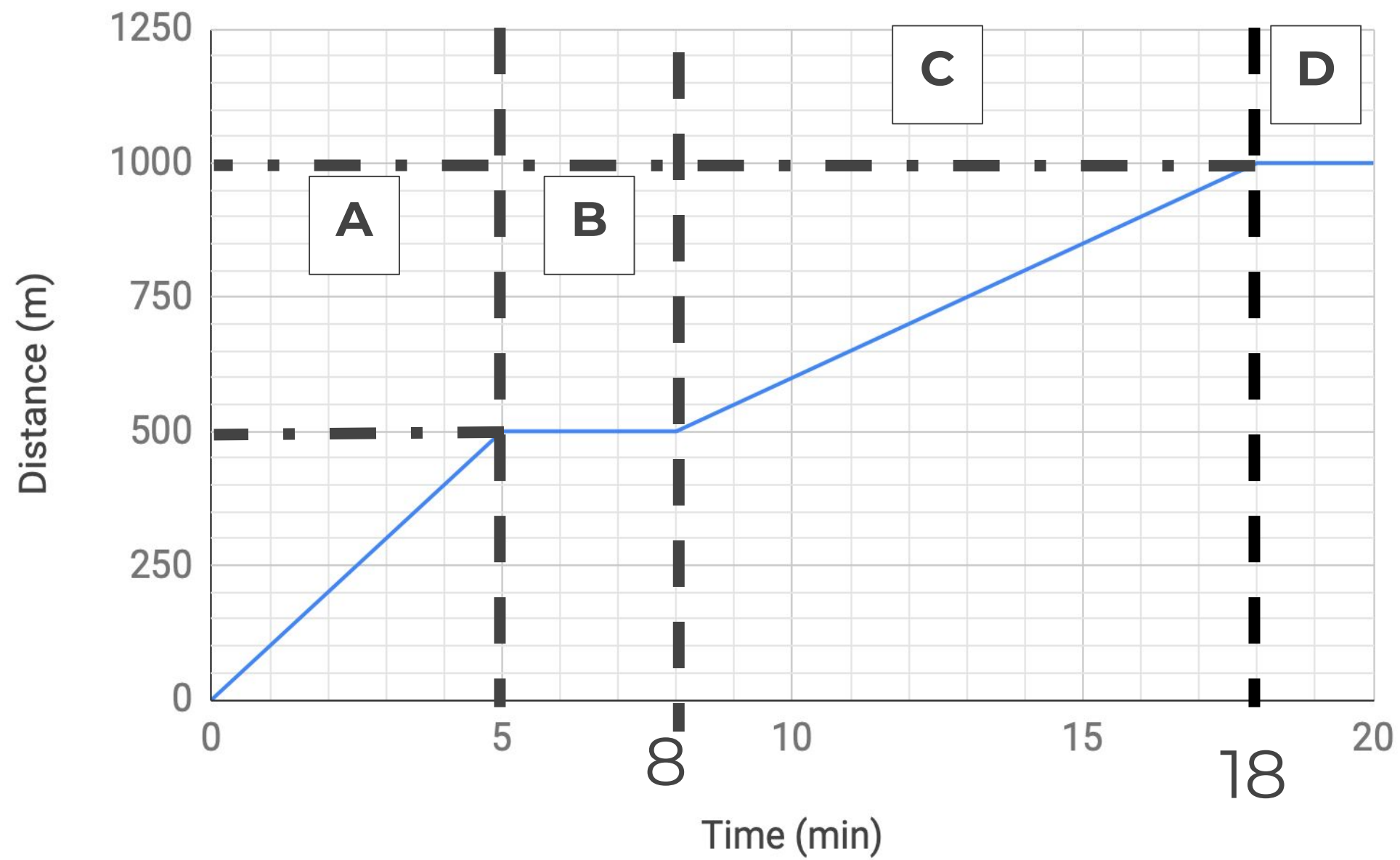
A distance-time graph represents a _____.
The _____ is on the y axis, and the _____ in on the x axis.
If the graph is a straight line the object is moving at a _____ speed.
If the graph is a flat line the object is _____ _____.
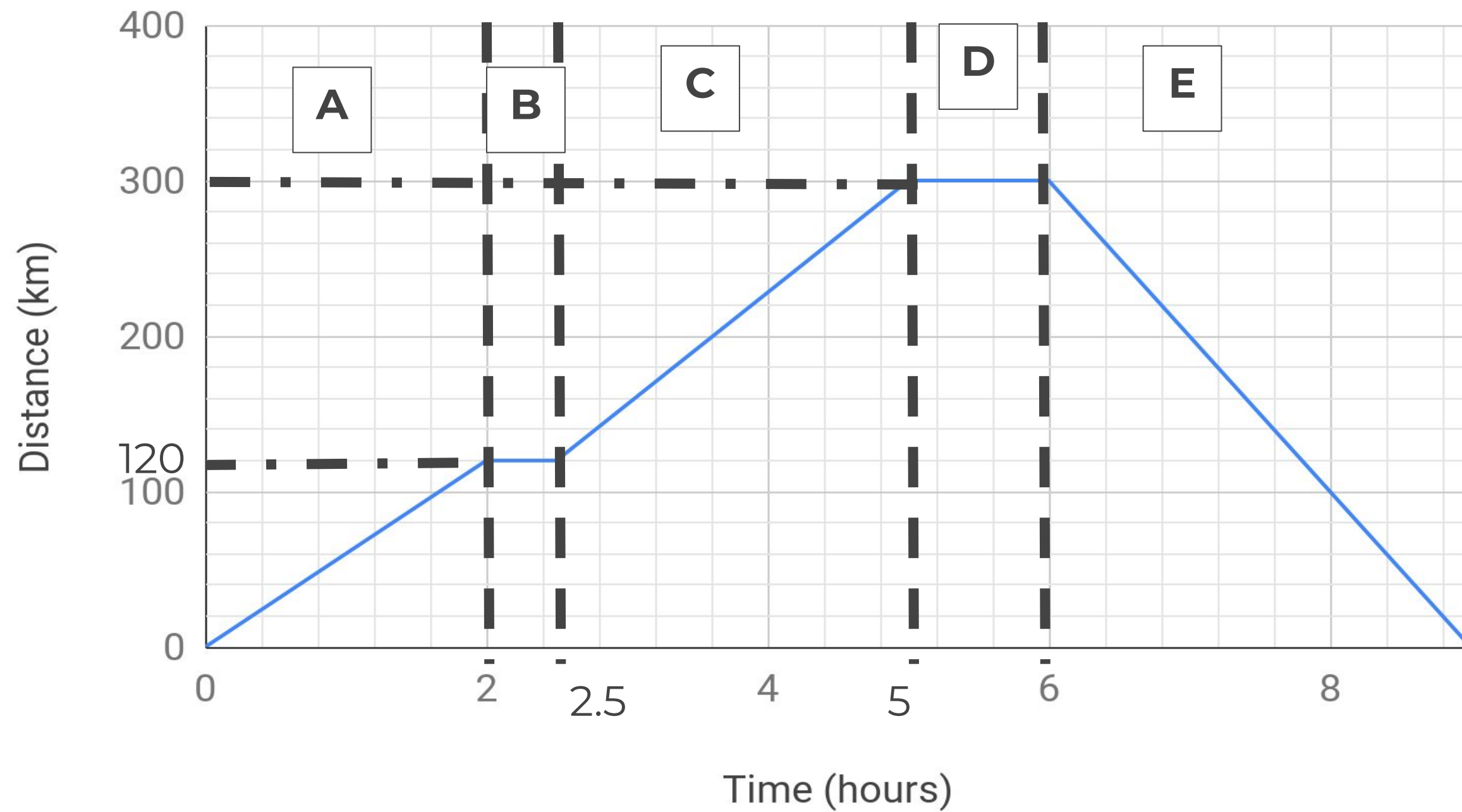If the graph is a curve the object is _____.

A: The hiker travelled at a constant speed for the first 5 minutes. He travelled 500 m.

B: The hiker stopped for 3 minutes.

C: The hiker travelled at a constant speed for 10 minutes. He travelled 500 m.
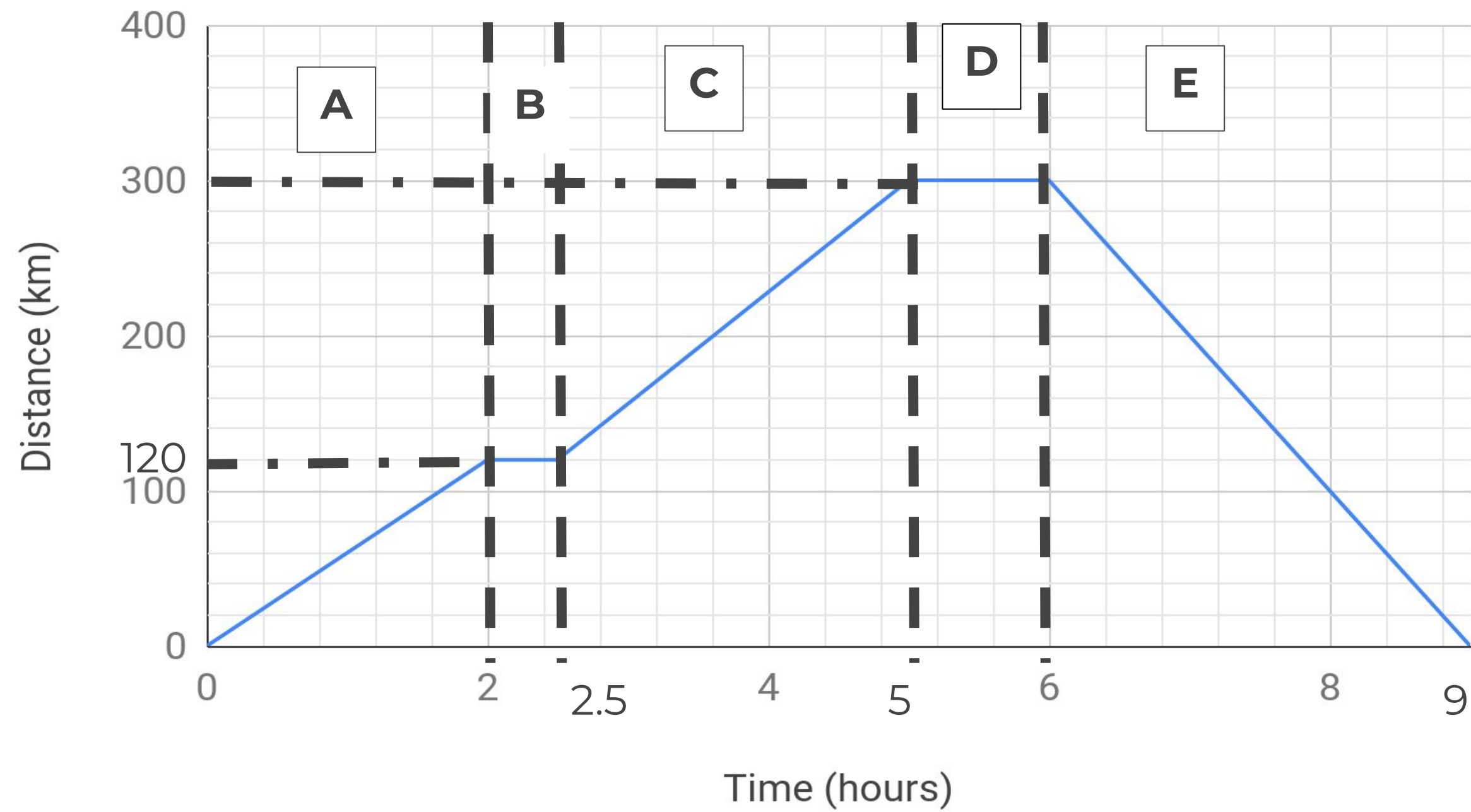
D: The hiker stopped for 2 minutes.

A: The car travelled at a constant speed for the first 2 hours and travelled 120 km.

B: The car stops for 0.5 hours.

C: The car travelled at a constant speed for 2.5 hours and travelled 180 km.
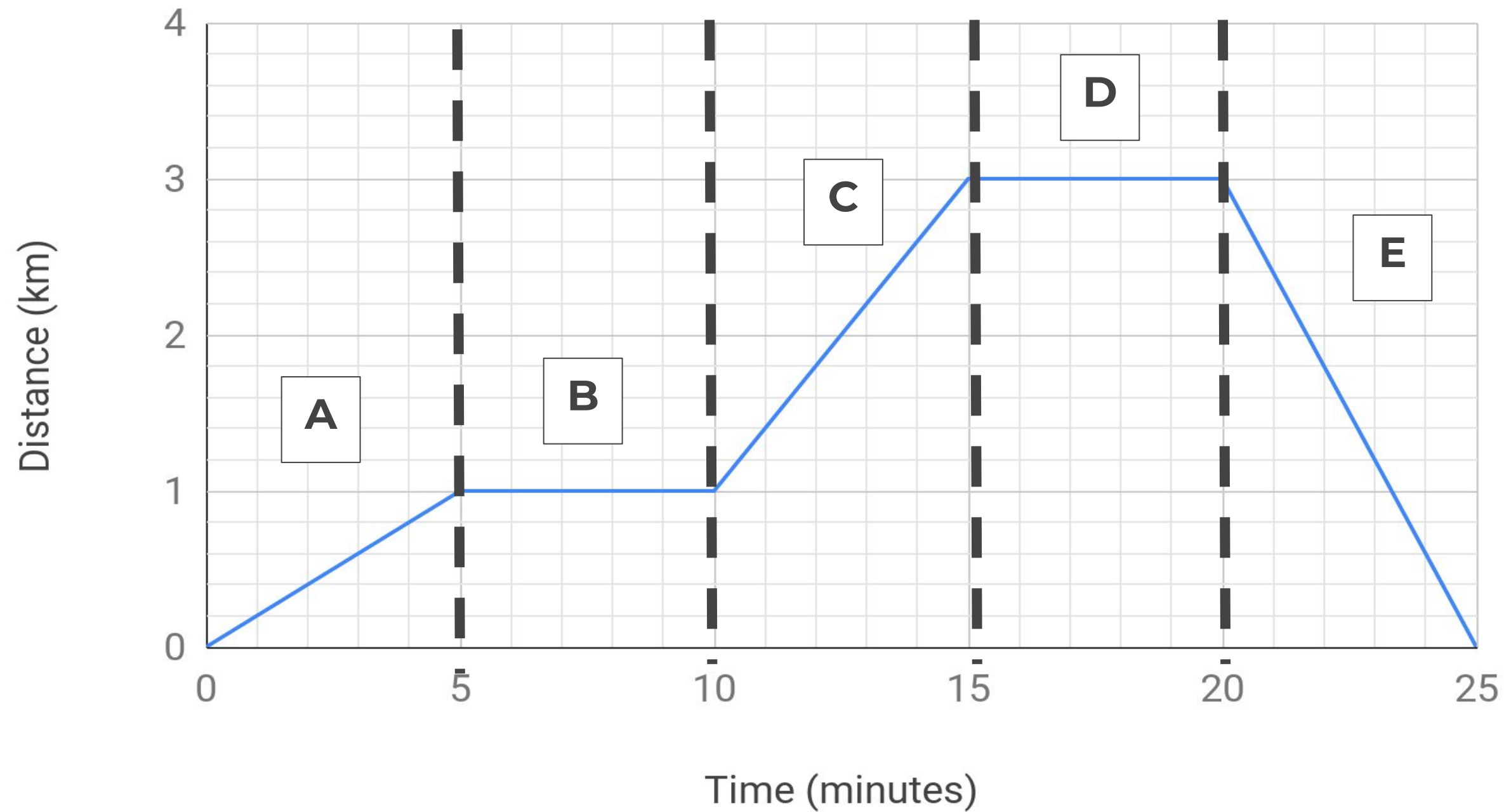
 D: The car stops for 1 hour.

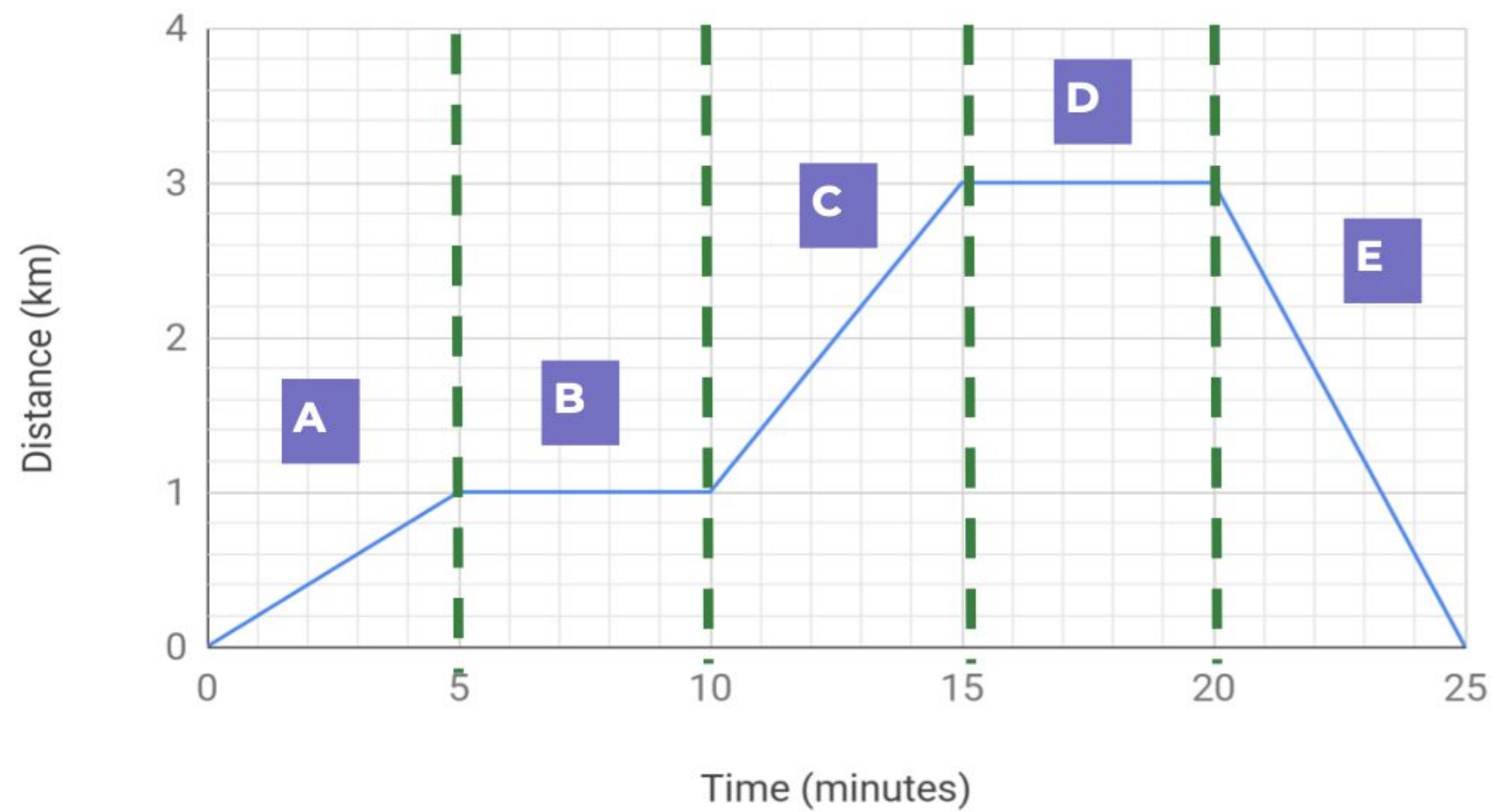E: The car travelled 300 km back at a constant speed for 3 hours.

Your Turn: A cheetah completes the journey on this graph. Describe the journey.

How long and how far?

A: The cheetah travelled at a _____ speed for _____ minutes and travelled _____.
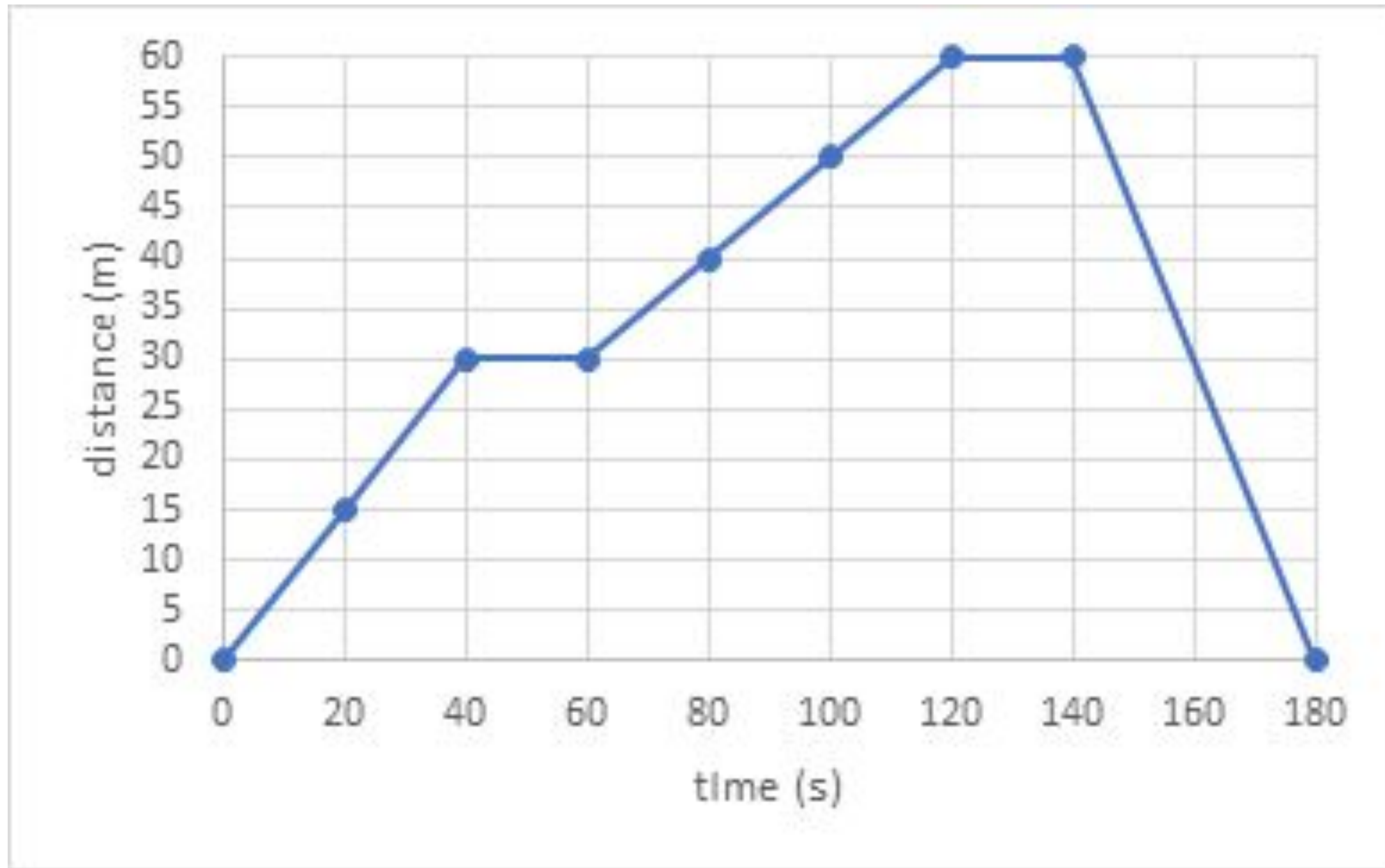
B: The cheetah was __ _____ for _____ minutes

C: The cheetah travelled at a _____ speed for _____ minutes and travelled _____.

D: The cheetah was at rest for _____ _____

E: The cheetah travelled _____ km back in _____ minutes at a constant speed.

Your Turn: Use the distance-time graph of a runner's journey to answer the questions.

Credit: Priti Solanki

1. How far did the runner travel in the first 40 s?
2. How can we tell they were running at a constant speed?
3. How long did they stop to rest **overall**?
4. How far did the runner travel in the last 40 s?
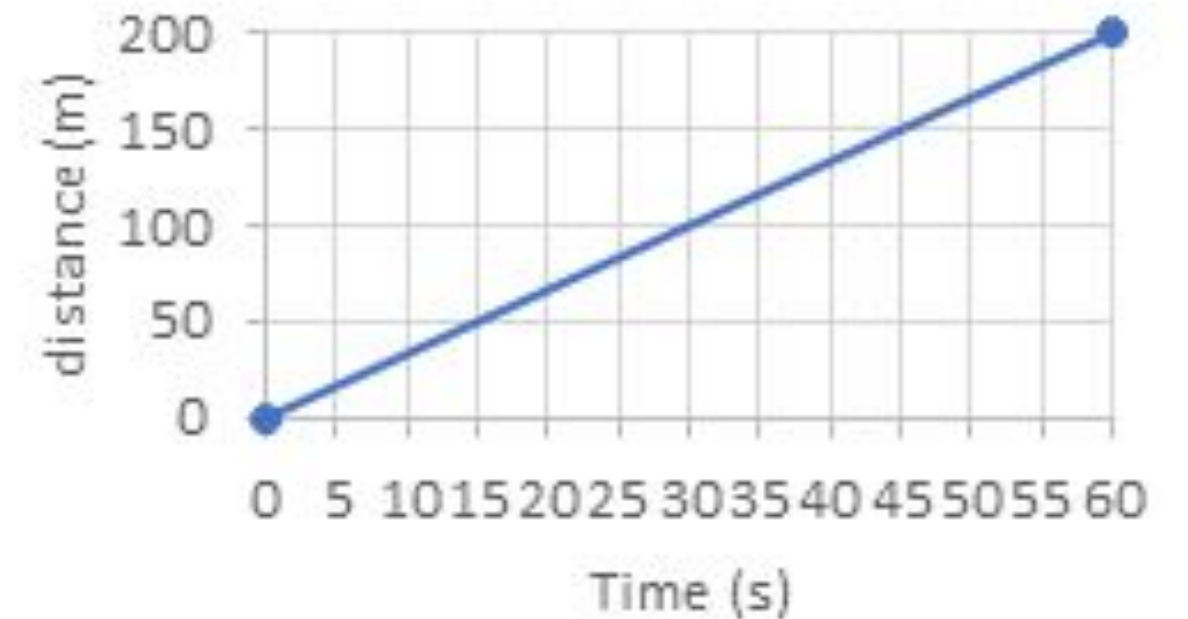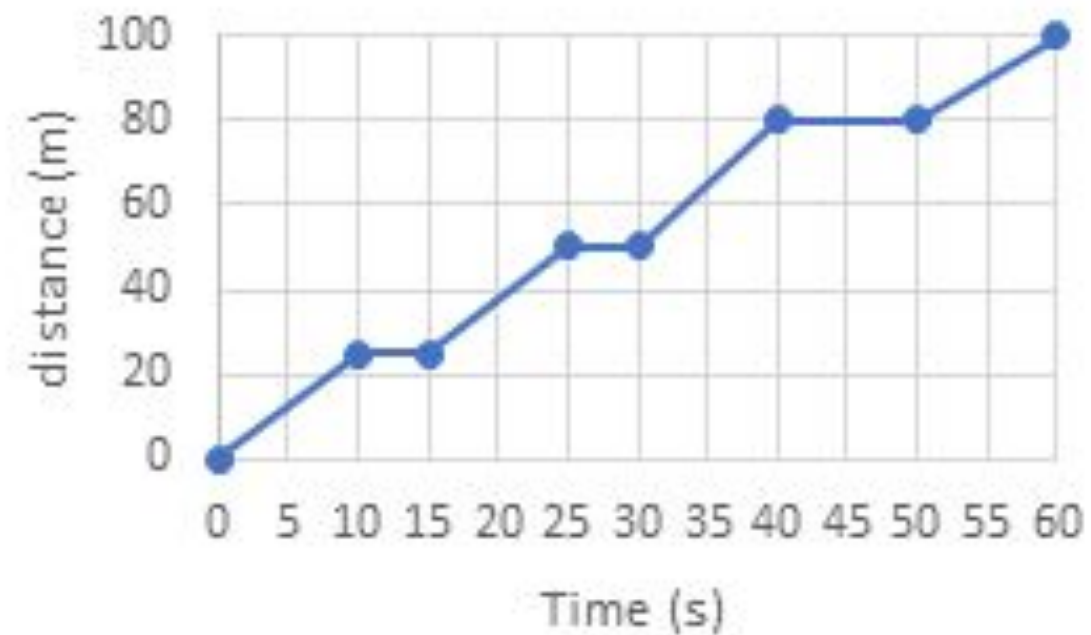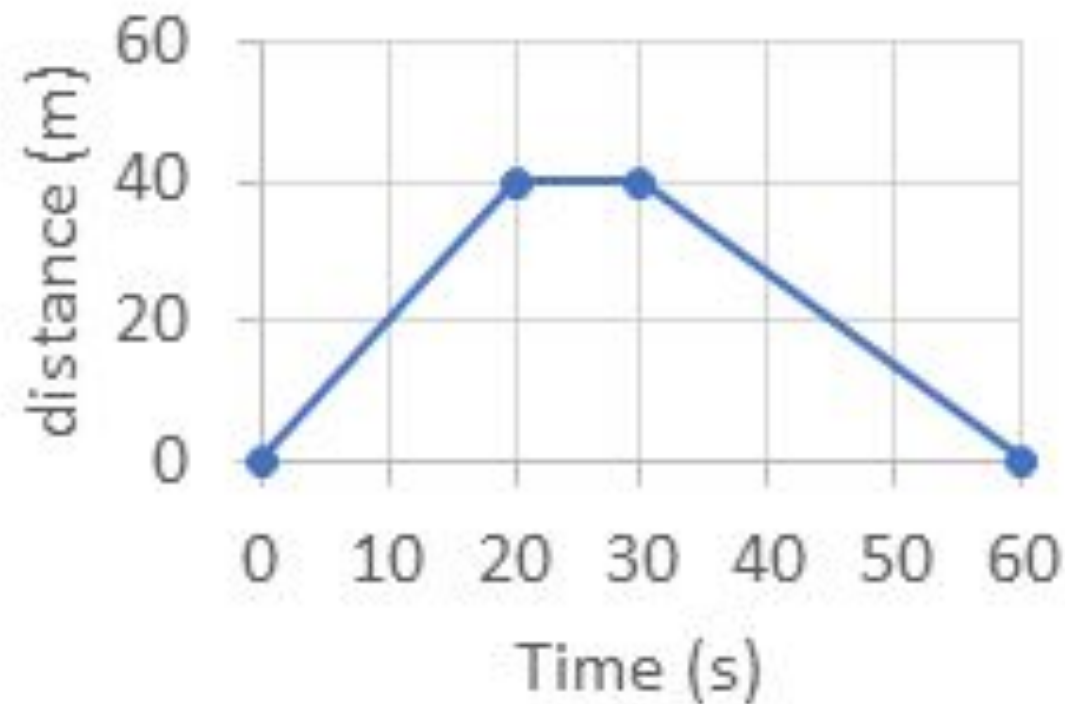5. Why does the distance go back down during the last part?

Your Turn: Match the graph to the journey

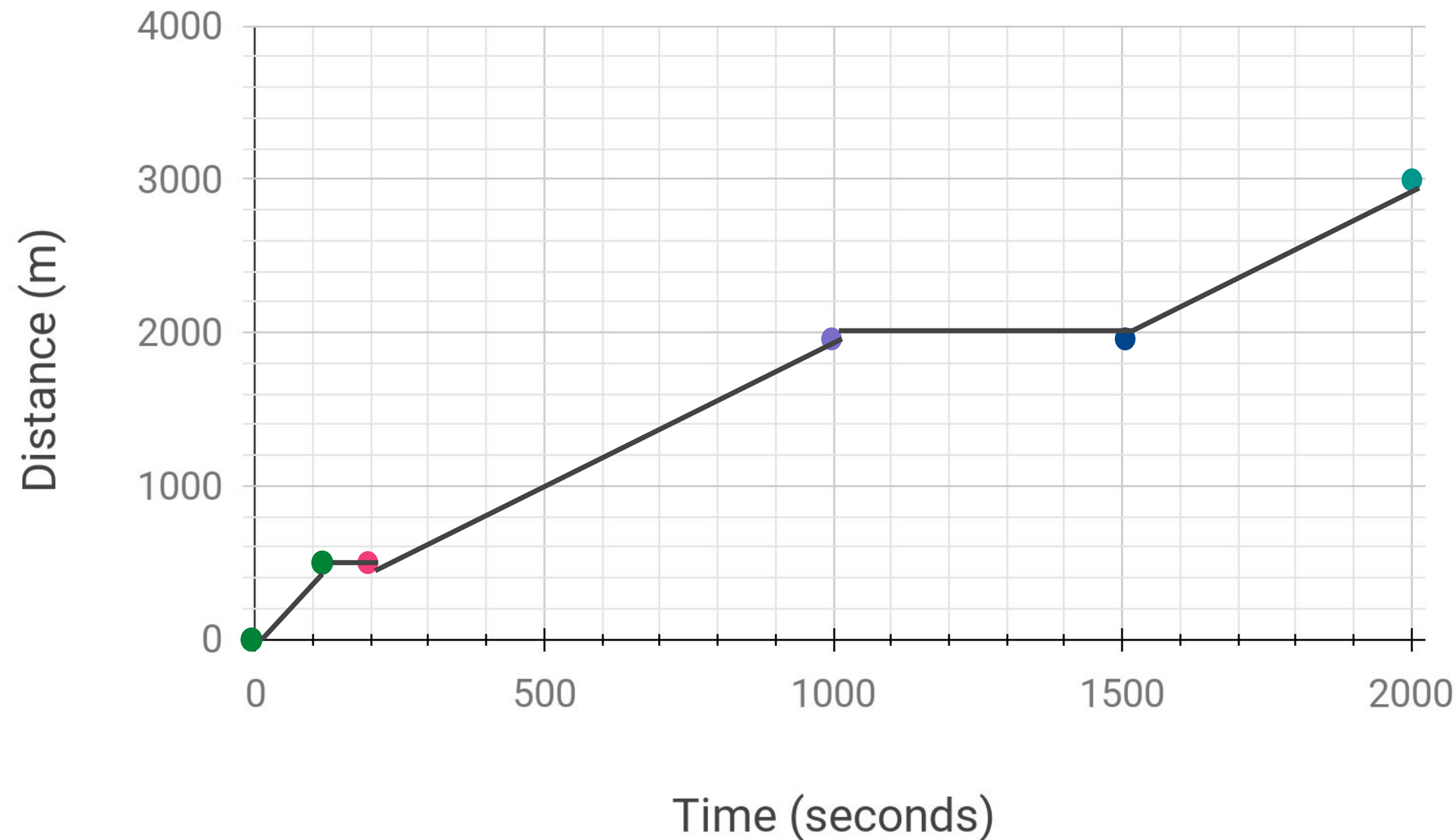A lion stalks its prey by moving slowly and stopping occasionally.

Lizzy runs to the end of the road, realises she's left her phone at home and heads back home to collect it.

The mouse runs fast to get away from the cat, not stopping for anything!
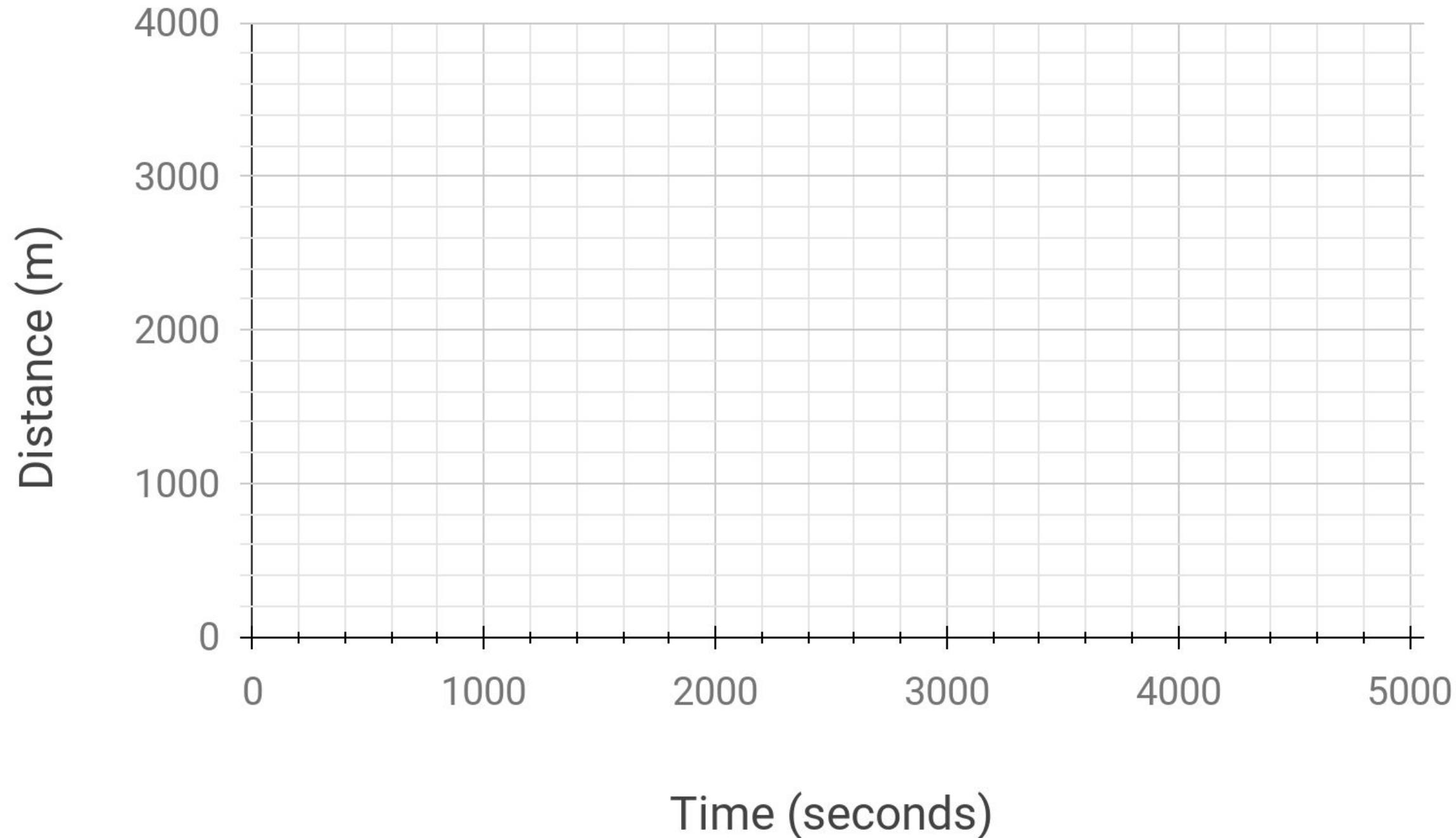

Credit: Priti Solanki

A. Pamela set out in her car this morning **and travelled 500 m in 100 s** before she **stopped at the traffic lights for 100 s**.

B. She then joined the motorway and travelled **1500 m in 800 s**.

C. She then **waited for 500 s** at a roundabout.

D. She then travelled the remaining **1000 m in 500 s**.

15

Your Turn:

A. Molly was so excited for her trip to the zoo that she ran the 1000m to school that morning. It only took her 100 s to get there.

B. She jumped on the coach, where they all waited 400s until everyone was settled and ready to go.

C. They travelled 3000 m and reached the zoo in 1000 s.

D. When they arrived, the coach driver stopped for 500s.

E. The zoo had been closed due to an emergency, so they all had to return back to school. It took them 3000 s to make the return journey.