



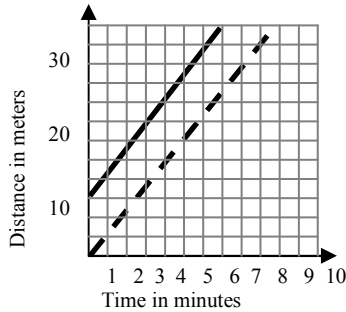
Distance versus time graphs:

A distance-time graph tells us how far an object has moved with time.

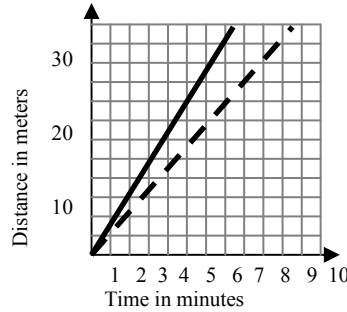
- The steeper the graph, the faster the motion.
- A horizontal line means the object is not changing its position
- A downward sloping line means the object is returning to the start.

Examine the graphs below, the data is for runners A and B. Determine which graph shows runner A starting the race 10 m ahead of runner B.

Runner A ——— Runner B - - -



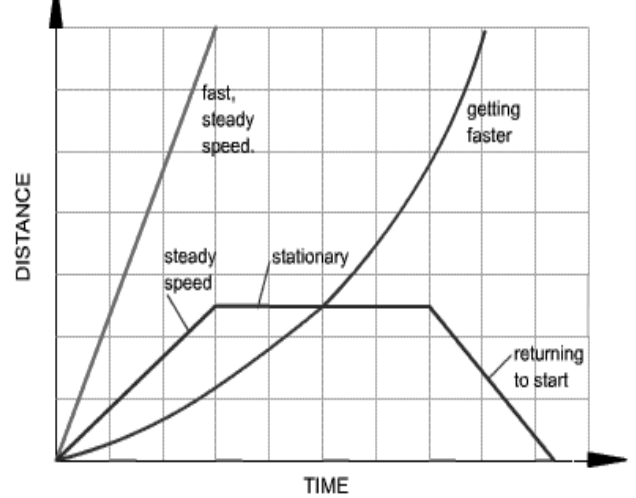
Graph 1



Graph 2

1. Provide your answer with and explanation:

Visual summary of distance vs. time:



2. Refer to the graphs of runners A and B on the left. Which graph shows the runners moving with at the same speed? Explain your answer (hint: speed is relates to the slope of the line),

Explaining a distance versus time graph.

The distance-time graphs below represent the motion of a car. Match the descriptions with the graphs. **Explain your answers.**

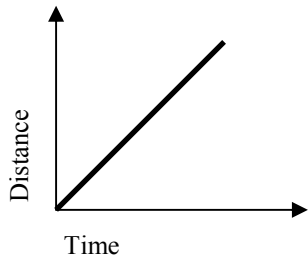
Descriptions:

- The car is stopped.
- The car is traveling at a constant speed.
- The speed of the car is decreasing.
- The car is coming back.

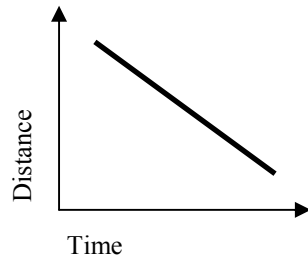
Graph

Explanation

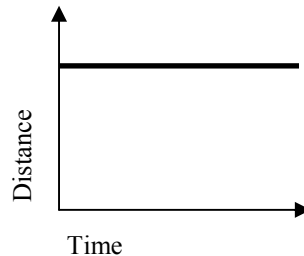
_____	_____
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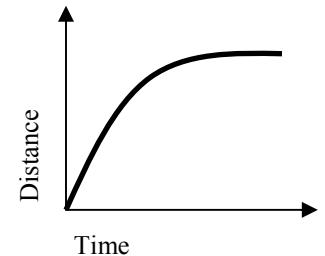
Graph A



Graph B



Graph C



Graph D

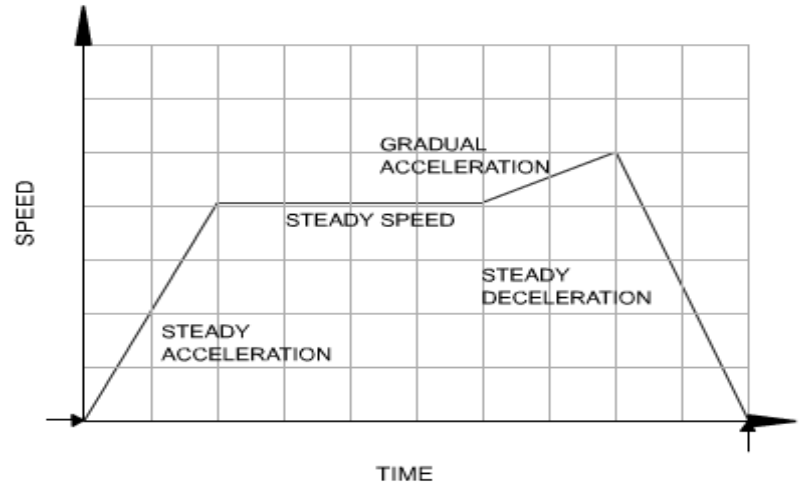


Speed versus time graphs:

Speed-Time graphs look much like Distance-Time graphs. Be sure to read the labels!!

- Time is plotted on the X-axis.
- Speed or velocity is plotted on the Y-axis.
- A straight horizontal line on a speed-time graph means that speed is constant. (It is not changing over time)
- A straight line does **not** mean that the object is stationary

Visual summary of speed vs. time:



Explaining a speed versus time graph.

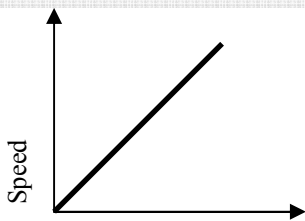
The speed-time graphs below represent the motion of a car. Match the descriptions with the graphs. **Explain your answers.**

Descriptions:

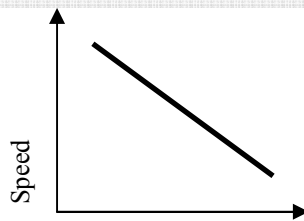
- The car is accelerating before constant speed.
- The car is traveling at a constant speed.
- The car is accelerating.
- The car is slowing down.

Graph

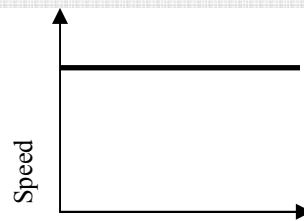
Explanation



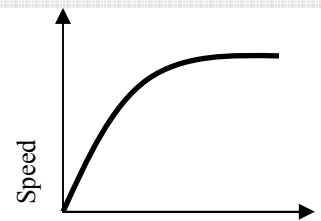
Graph A



Graph B

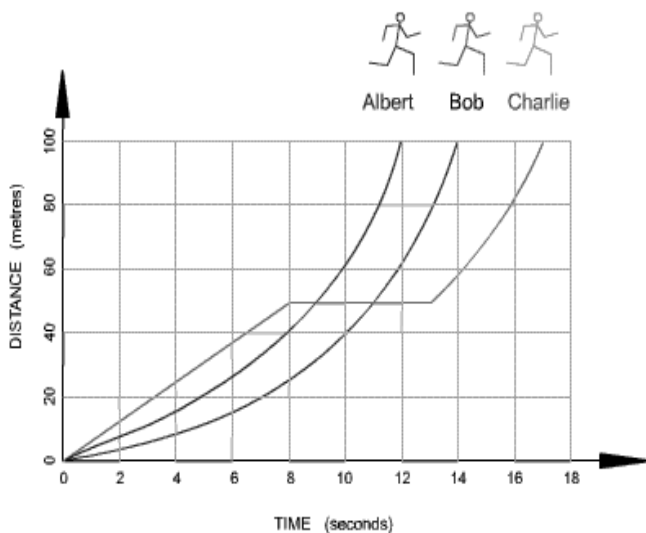


Graph C



Graph D

Analyzing speed and time graphs: Look at the graph below, it shows data for three runners in a 100 m race.



- Explain how you know who won the race

- Explain how you know which runner stopped, and for how long, during the race

- How long did it take Bob to complete the race/ _____
- Calculate Albert's average speed—show your work!!

