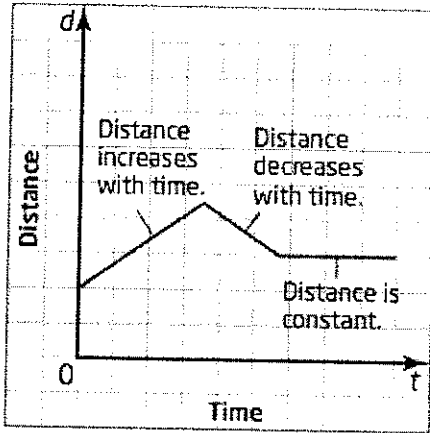# 2.6 Distance Time Graphs

A distance-time graph shows an object's distance from a fixed point over a period of time.
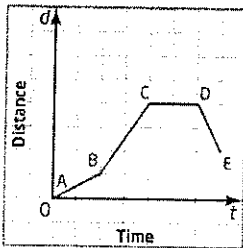
A rising line shows that distance from a point _increases_ as time increases.

A falling line shows that distance from a point _decreases_ as time increases.

A horizontal line shows that distance from a point remains _constant_

Analyzing a Distance-Time Graph

Describe the following graph that represents a person's distance from home over a period of time:

AB: _slowly walking away from house_
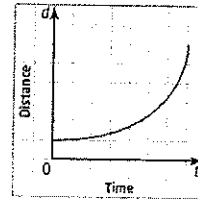
BC: _Continues walking away, but faster now_

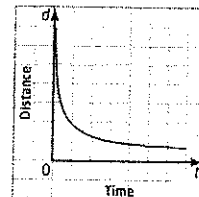CD: _Stops somewhere_

DE: _Begins returning home quickly_

Note: A straight line indicates a constant rate of movement. Also, the steeper a line, the faster the rate of movement.

Changes of Rate of Movement

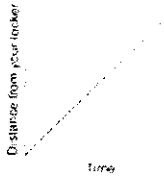A curve may represent an increase in rate of movement (_acceleration_)

- -

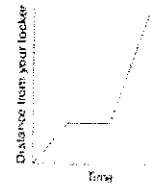A curve may represent a decrease in rate of movement (_deceleration_)

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Describing Distance Time Graphs

The following graphs show the movement of various students on their way to class today from their locker. Describe each graph:
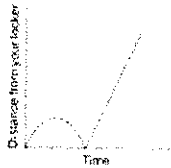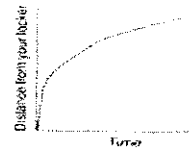
Description:

Walks to class at a constant rate.

Description:

- starts walking to class
- stops to talk to friends
- rushes to class when they realize they are late.

Description:

- Start walking to class but they start slowing down to check their bag to see if they have their binder. Once they realize they forgot it, they rush back to their locker accelerating the whole way. Once they have retrieved their binder they walk to class quickly at a constant rate.
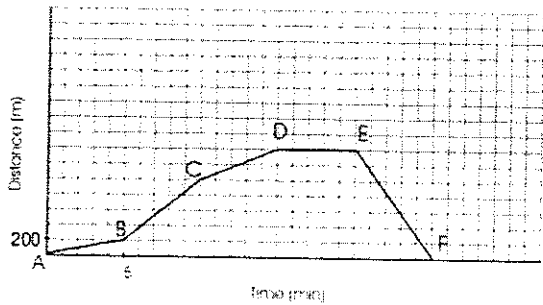
Description:

- Start sprinting to class but then gets told they are not allowed to run in the halls so they decelerate the rest of the way to class.

Chris walks each day as part of his daily exercise. The graph shows his distance from home as he walks his route.

Using the graph, give an explanation of what is occurring over Chris' walk. Include information about time, distance, direction and speed during each segment

AB: 200m over 5min. Speed of 40m/min away from home.

BC: 800m over 5min. Speed of 160 m/min away from home.

CD: 400m over 5 min. Speed of 80 m/min away from home.

DE: 0 meters over 5 minutes. Speed of 0 m/min

EF: 1400 m over 5 minutes. Speed of 280 m/min

Homework:

Complete Worksheet

and

Pg. 91 #1-5,7,8