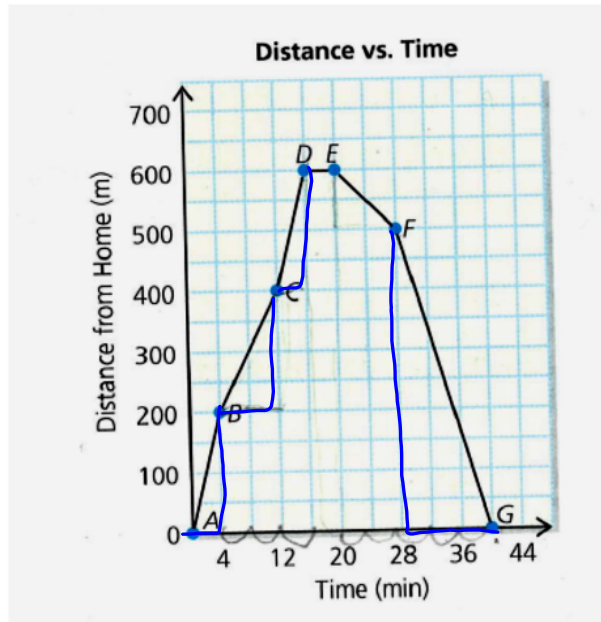


Models of Movement (The Graph and its Story)

Example 1

Billy's mother sends him to the corner store for milk and tells him to be back in 30 minutes. The graph below shows Billy's trip to the store and back.



1. Why are some line segments steeper than others?

Speed

2. Calculate the slope of each of the line segments. What does the slope of each line segment tell you?

AB $\frac{200m}{4min} = 50 \frac{m}{min}$

DE 0

BC $\frac{200}{8min} = 25 \frac{m}{min}$

EF $-12.5 \frac{m}{min}$

CD $50 \frac{m}{min}$

FG $\frac{500m}{12min} = 41.2 \frac{m}{min}$

3. Over what interval(s) of time is Billy travelling the slowest? Fastest?

AB, BC (fast)

4. When does Billy reach the store? How do you know?

16 mins

5. How long did it take Billy to get to the store?

16 mins

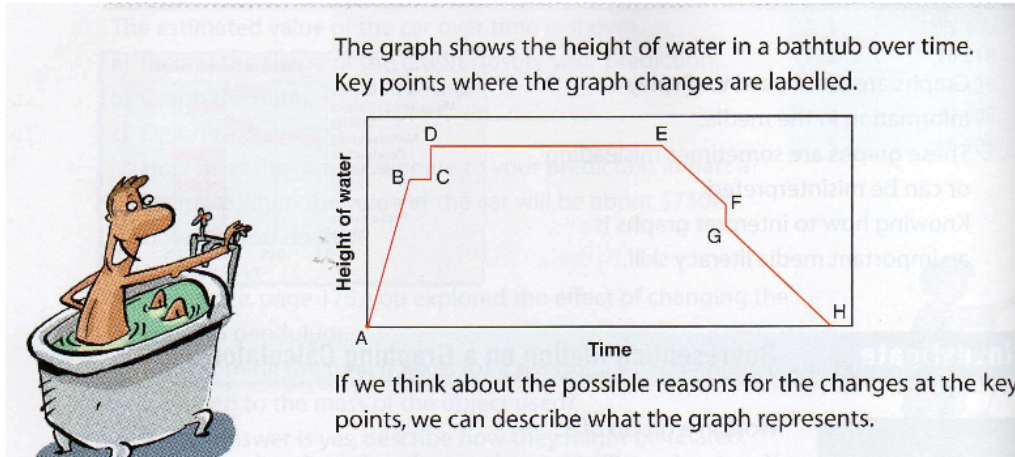
6. How the direction in which Billy is travelling represented on the graph?

distance from home.

7. Did Billy make it back in 30 minutes?

no

Example 2



Describe what is happening at each line segment.

- AB filling up the tub
- BC tap is off
- CD gets in the tub
- DE bath time
- EF pulls the plug
- FG gets out
- GH water drains

Example 3: Sketch a distance-time graph for each story below.

- a) Mr. Elliott accelerates his car from 0 to 100 km/h then puts the car on cruise control (constant speed) at 100km/h.



- b) A roller coaster climbs steady up the first hill then accelerates down a steep slope.

