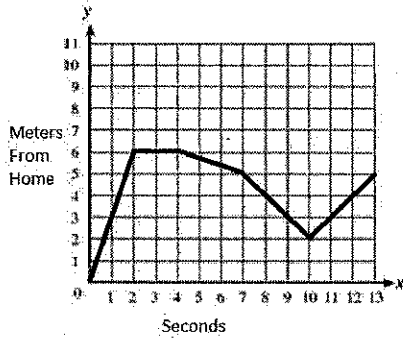


8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

The following Graph represents Mel and her distance from home.



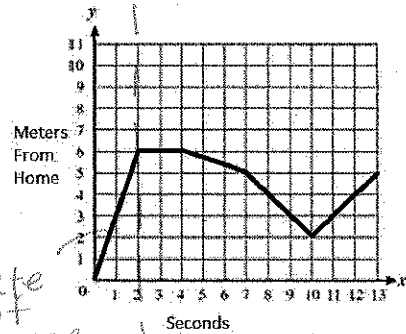
When is Mel at home?

- a. 0 seconds
- b. 4 seconds
- c. 10 seconds
- d. 13 seconds

Which best describes what Mel is doing from 4-7 seconds.

- a. Running away from home *not at hm.*
- b. Driving towards home *maybe?*
- c. Staying in the same position *moving towards home.*
- d. Walking toward home *probably since rate is slower*

The following Graph represents Mel and her distance from home.



rate of change  $\frac{6m}{2sec} = 3m/1s.$

When is Mel traveling the fastest?

- a. 0-2 seconds
- b. 4-7 seconds
- c. 7-10 seconds
- d. 10-13 seconds

Which best describes what Mel is doing from 10-13 seconds.

- a. Walking away from home
- b. Walking towards home
- c. Staying in the same position
- d. Walking up the stairs in her house *(not at hm.)*

The graph shows the temperature over a 12-hour period.

Part A: Why does this graph represent a function? Explain your answer.

*Every time (x) only has one temperature (y) Function means each input (x) has only one output (y).*

Part B: Analyze the graph to describe where the function is increasing or decreasing. Include how the graph differs in the two input intervals of the function in your analysis. Justify your answer.

*There are 2 intervals. Between 0 & 5 hours, the temperature is increasing at a constant rate  $\frac{3^\circ}{5hrs}$  between 5 & 12 hours, it is increasing at a constant rate of  $\frac{1^\circ}{1hr}$ . ( $= 1^\circ/hr$ ) I know they are constant*

Part C: Write an equation for a single linear function that includes both endpoints of the graph. Show your work. (Recognize that you are creating this line from the two endpoints.)

$(0, 3)$   
 $(12, 7)$

$$m = \frac{y}{x} = \frac{7-3}{12-0} = \frac{4}{12} = \frac{1}{3}$$

$y \text{ int} = 3$   $b/c (0, 3)$

$$y = \frac{1}{3}x + 3$$

