

## Modeling with Linear Functions Classwork (Analyzing Graphs)

**DO NOW:** Given the points  $(-3, -16)$  and  $(2, 9)$ , determine the equation of the line. Then, determine the value of  $a$ , to make the point  $(a, -6)$  lie on the line.

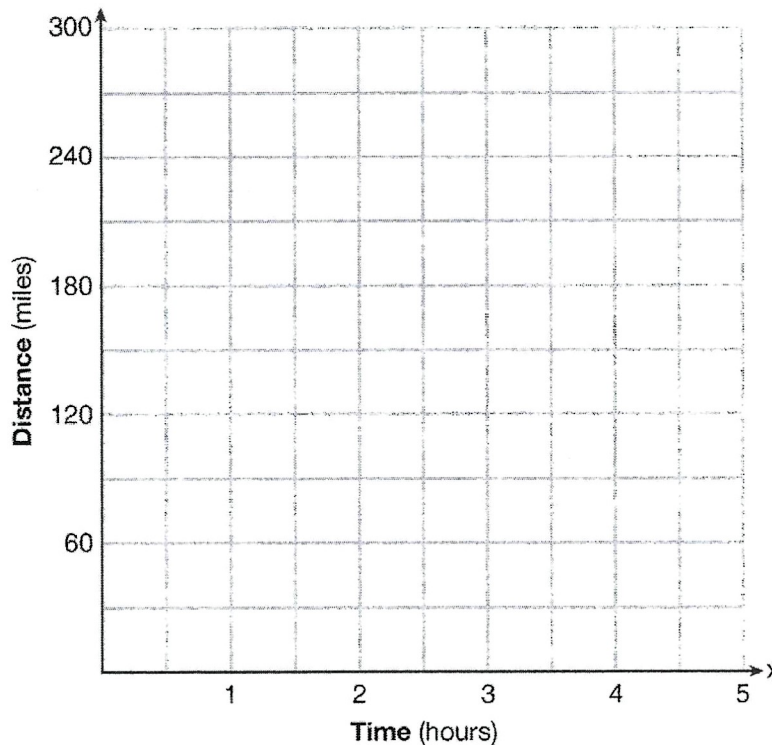
**Guided Practice:**

*Exercise 1-* The cost of belonging to a gym can be modeled by  $C(m) = 50m + 79.50$ , where  $C(m)$  is the total cost for  $m$  months of membership.

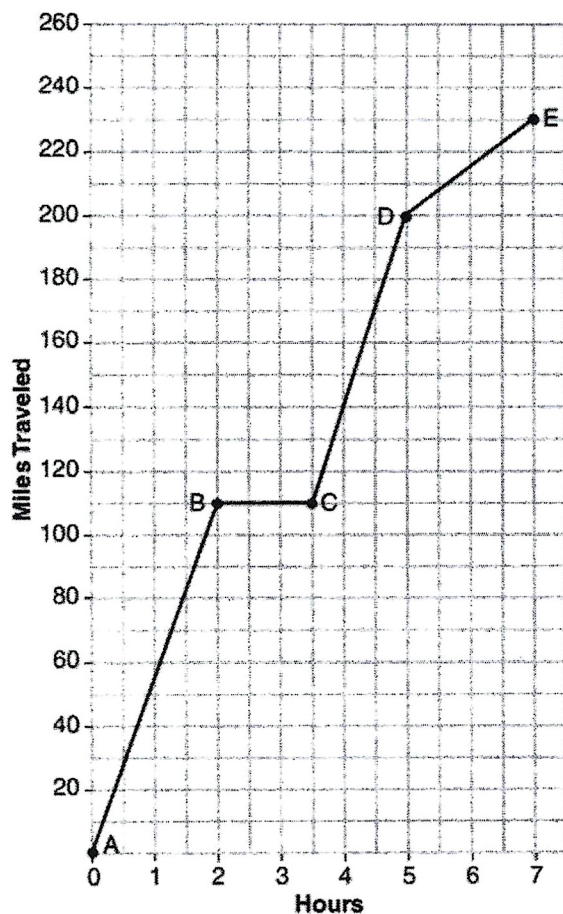
State the meaning of the slope and y-intercept of this function with respect to the costs associated with the gym membership.

*Exercise 2-* A driver leaves home for a business trip and drives at a constant speed of 60 miles per hour for 2 hours. Her car gets a flat tire, and she spends 30 minutes changing the tire. She resumes driving and drives at 30 miles per hour for the remaining one hour until she reaches her destination.

On the set of axes below, draw a graph that models the driver's distance from home.



*Exercise 3-* The graph below models Craig's trip to visit his friend in another state. In the course of his travels, he encountered both highway and city driving.



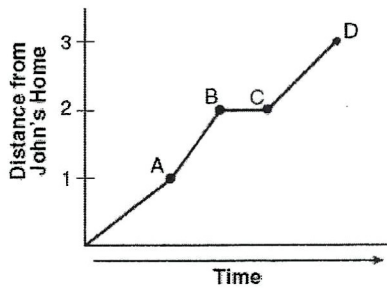
Based on the graph, during which interval did Craig most likely drive in the city? Explain your reasoning.

Explain what might have happened in the interval between B and C.

Determine Craig's average speed, to the nearest tenth of a mile per hour, for his entire trip

## HOMEWORK:

1. John left his home and walked 3 blocks to his school, as shown in the accompanying graph. What is one possible interpretation of the section of the graph from point  $B$  to point  $C$ ?

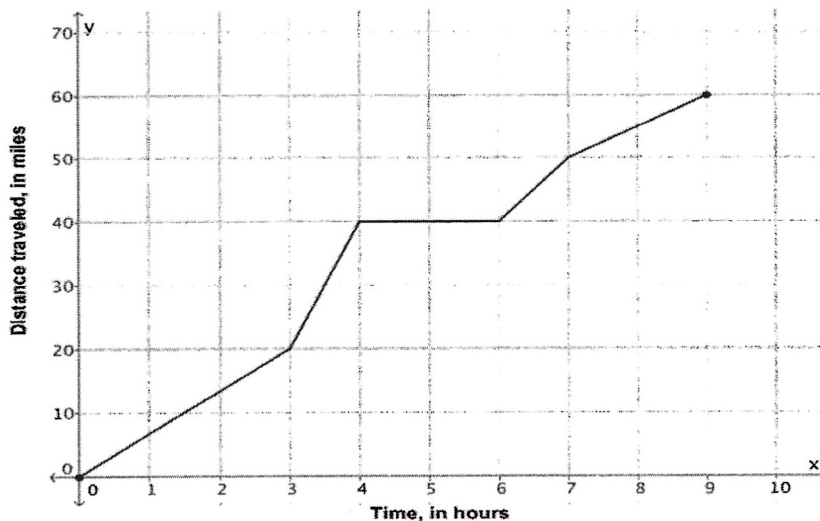


- (1) John arrived at school and stayed throughout the day.
- (2) John waited before crossing a busy street.
- (3) John returned home to get his mathematics homework.
- (4) John reached the top of a hill and began walking on level ground.

2. The amount Mike gets paid weekly can be represented by the expression  $2.50a + 290$ , where  $a$  is the number of cell phone accessories he sells that week. What is the constant term in this expression and what does it represent?

- (1)  $2.50a$ , the amount he is guaranteed to be paid each week
- (2)  $2.50a$ , the amount he earns when he sells a accessories
- (3) 290, the amount he is guaranteed to be paid each week
- (4) 290, the amount he earns when he sells a accessories

3. Sarah went on a bike ride. The graph below shows the distance,  $y$ , in miles, that she had traveled after biking for  $x$  hours.



State the domain and range of the function shown in the graph.

Explain what may have happened between hour 4 and 6.

State the interval of time during which Sarah was riding the fastest. Explain your reasoning.