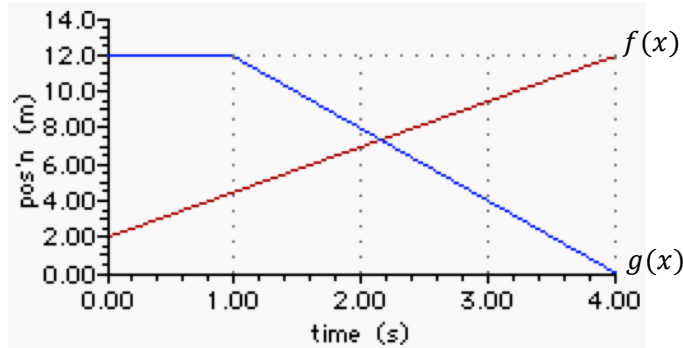


## CH. 1, L5 – INTERPRET FUNCTIONS GRAPHS

**Objective:** Given a graph and function notation statements, I will describe its meaning in context.

**Think About It:** The graph below shows Jessie and Roger’s distance from the hoop during the first four seconds of a play in their basketball game. Jessie’s distance from the hoop is defined by the function  $f(x)$  and Roger’s distance is defined by  $g(x)$ .



a. Given the graph, what does  $g(3) = 4$  represent?

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b. Given the graph, evaluate  $f(4)$  and explain what it represents given the context.

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c. Graph  $f(2.2) = g(2.2)$  and explain what it means given the context.

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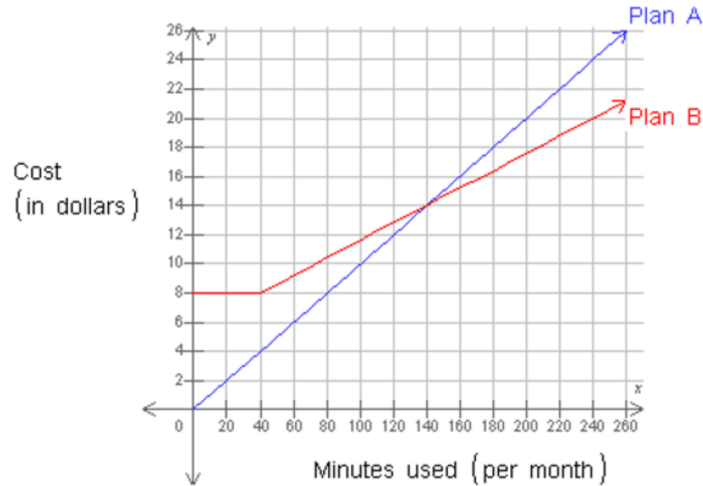
**Big Idea:**

CFS:

1. Highlight important information and circle the question/prompt.
2. Annotate inputs and outputs for graph and function notation
3. Corresponding points are graphed and labeled
4. Inputs and outputs are described in the context of the problem in a complete sentence

**Interaction with New Material:**

**Ex. 1)** Alan is trying to determine which internet usage plan he should buy for his phone. Both plans show the total cost as a function of the number of minutes used per month. Complete the following problems with Plan A =  $f(x)$  and Plan B =  $g(x)$ .



a. Evaluate and explain the meaning of  $f(60)$ .

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b. Evaluate and explain the meaning of  $g(x) = 20$ .

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c. Plot a point on the graph where  $f(x) = g(x)$  and explain the meaning of this point in context.

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d. Complete the inequality statement by filling in the blank and explain what this means in the context of the graph:

$$f(x) \boxed{\phantom{<}} g(x), \text{ for } x > 140$$

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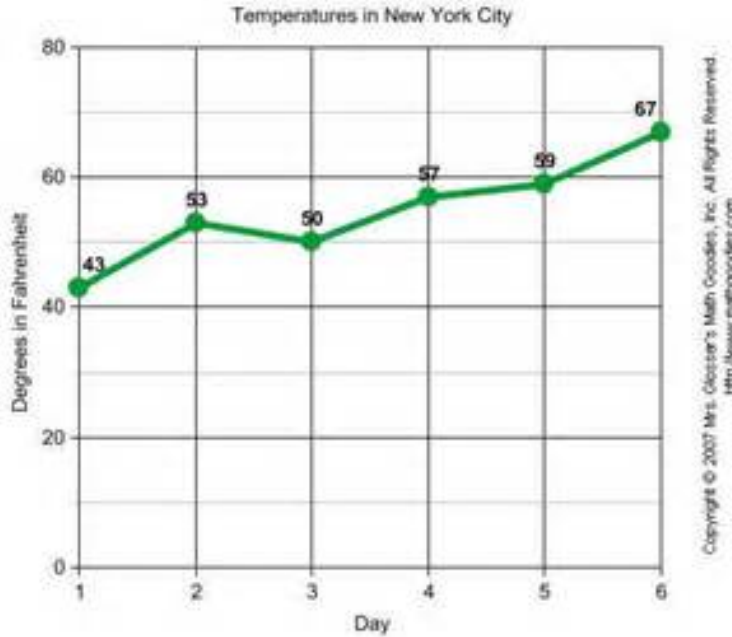
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CFS:

1. Highlight important information and circle the question/prompt.
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**Partner Practice: (Low Difficulty)**

Use the graph below to answer the following questions:



1. Evaluate  $f(5)$  and explain its meaning using the labels of the graph.

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2. Evaluate  $f(x) = 50$  and explain its meaning given the context.

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3. Complete the following inequalities and explain what each one means in context:

a.  $f(2) \square f(4)$  \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

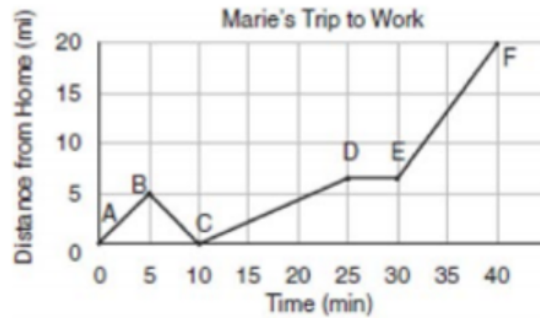
b.  $f(3) \square f(1)$  \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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**Partner Practice: (Medium Difficulty)**

The graph below shows Marie’s distance from home (A) to work (F) at various times during her drive.



4. Evaluate and explain the meaning of  $f(5)$ .

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5. Evaluate and explain the meaning of  $f(x) = 20$

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6. What values of a and b make the following true  $f(a) = f(b) = 0$ ? What does this mean given the context?

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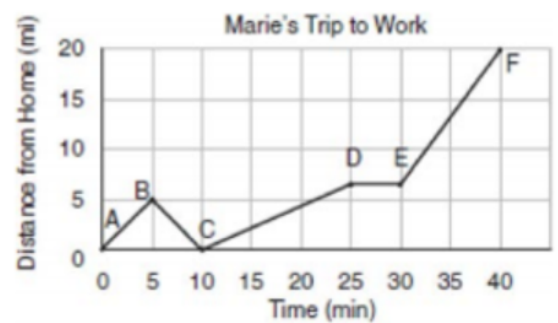
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7. Use the following information about Charlie’s trip to work to plot Charlie’s graph on the same grid as Marie’s:

- a)  $g(0) = 5$
- b) Charlie’s maximum distance from home is at  $g(15) = 20$
- c)  $g(5) = g(25) = g(40) = 15$
- d) The function is constant from  $x > 25$



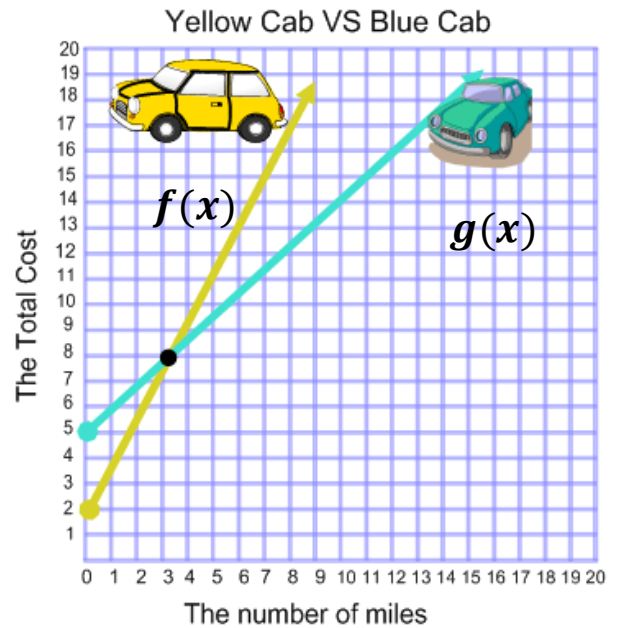
CFS:

1. Highlight important information and circle the question/prompt.
2. Annotate inputs and outputs for graph and function notation
3. Corresponding points are graphed and labeled
4. Inputs and outputs are described in the context of the problem in a complete sentence

**Partner Practice: (Hard Difficulty)**

Use the graph to the right to answer the following questions:

- 8. Write an inequality statement with function notation that shows which cab is cheaper for short distance cab rides.



- 9. Write an inequality statement with function notation that shows which cab is more expensive for rides that are longer in distance.

- 10. Francis took a few different cab rides over the weekend. Evaluate the approximate value of the function below and explain its meaning in context.

$$f(2) + g(10) + f(6)$$

CFS:

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3. Corresponding points are graphed and labeled
4. Inputs and outputs are described in the context of the problem in a complete sentence