

# Unit 4 Lesson 5: Using Function Notation to Describe Rules (Part 2)

## 1 Make It True (Warm up)

### Student Task Statement

Consider the equation  $q = 4 + 0.8p$ .

1. What value of  $q$  would make the equation true when:
  - a.  $p$  is 7?
  - b.  $p$  is 100?
  
2. What value of  $p$  would make the equation true when:
  - a.  $q$  is 12?
  - b.  $q$  is 60?

Be prepared to explain or show your reasoning.

## 2 Data Plans

### Student Task Statement

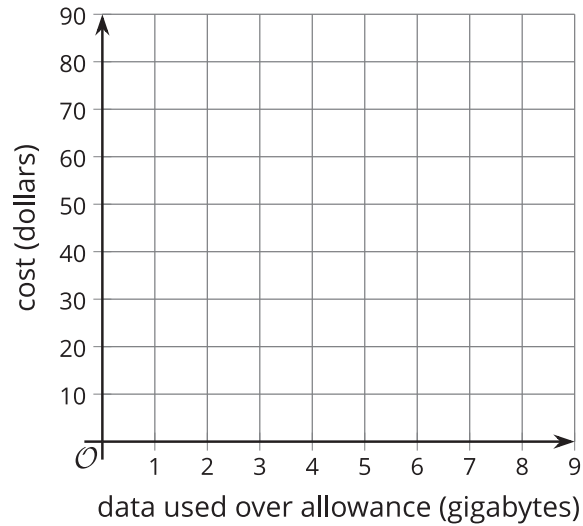
A college student is choosing between two data plans for her new cell phone. Both plans include an allowance of 2 gigabytes of data per month. The monthly cost of each option can be seen as a function and represented with an equation:

- Option A:  $A(x) = 60$
- Option B:  $B(x) = 10x + 25$

In each function, the input,  $x$ , represents the gigabytes of data used *over* the monthly allowance.

1. The student decides to find the values of  $A(1)$  and  $B(1)$  and compare them. What are those values?
2. After looking at some of her past phone bills, she decided to compare  $A(7.5)$  and  $B(7.5)$ . What are those values?

- Describe each data plan in words.
- Graph each function on the same coordinate plane. Then, explain which plan you think she should choose.



- The student only budgeted \$50 a month for her cell phone. She thought, "I wonder how many gigabytes of data I would have for \$50 if I go with Option B?" and wrote  $B(x) = 50$ . What is the answer to her question? Explain or show how you know.

### 3 Function Notation and Graphing Technology (Optional)

#### Student Task Statement

The function  $B$  is defined by the equation  $B(x) = 10x + 25$ . Use graphing technology to:

1. Find the value of each expression:

$B(6)$

$B(2.75)$

$B(1.482)$

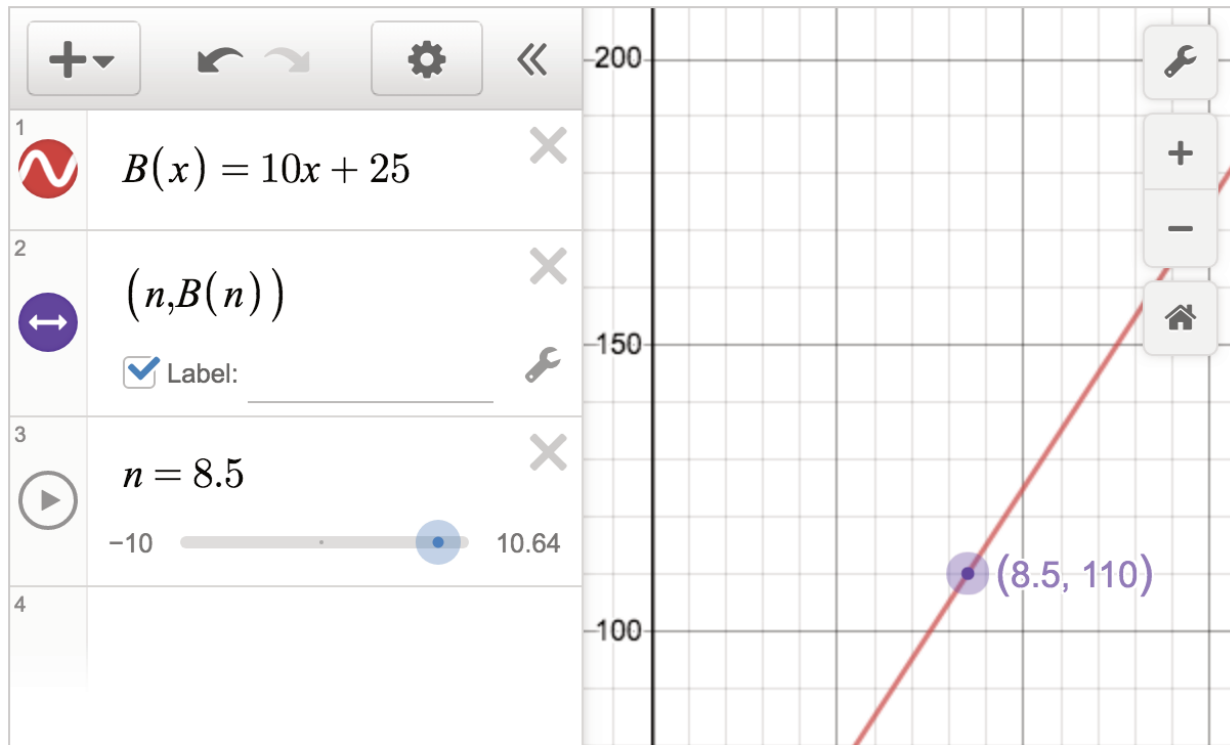
2. Solve each equation:

$B(x) = 93$

$B(x) = 42.1$

$B(x) = 116.25$

#### Activity Synthesis



### Images for Activity Synthesis

