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

### 1 Make It True (Warm up)

#### Student Task Statement

Consider the equation .

1. What value of would make the equation true when:
   1. is 7?
   2. is 100?
2. What value of would make the equation true when:
   1. is 12?
   2. is 60?

Be prepared to explain or show your reasoning.

### 2 Data Plans

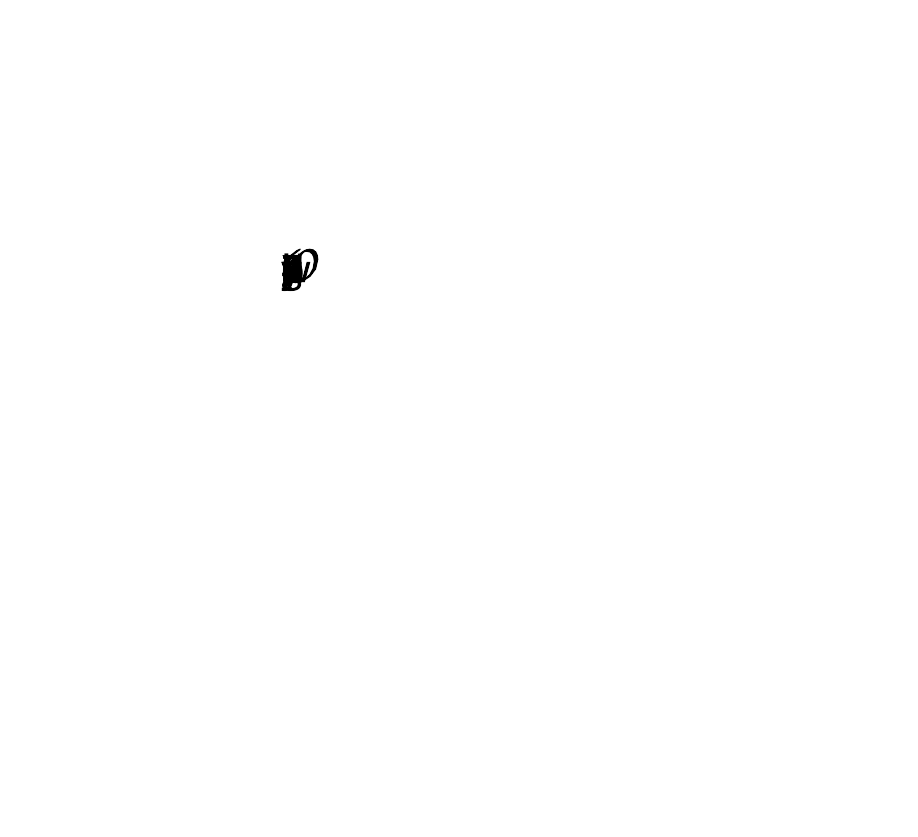
#### Student Task Statement

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:
* Option B:

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

1. The student decides to find the values of and and compare them. What are those values?
2. After looking at some of her past phone bills, she decided to compare and . What are those values?
3. Describe each data plan in words.
4. Graph each function on the same coordinate plane. Then, explain which plan you think she should choose.

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1. 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 . What is the answer to her question? Explain or show how you know.

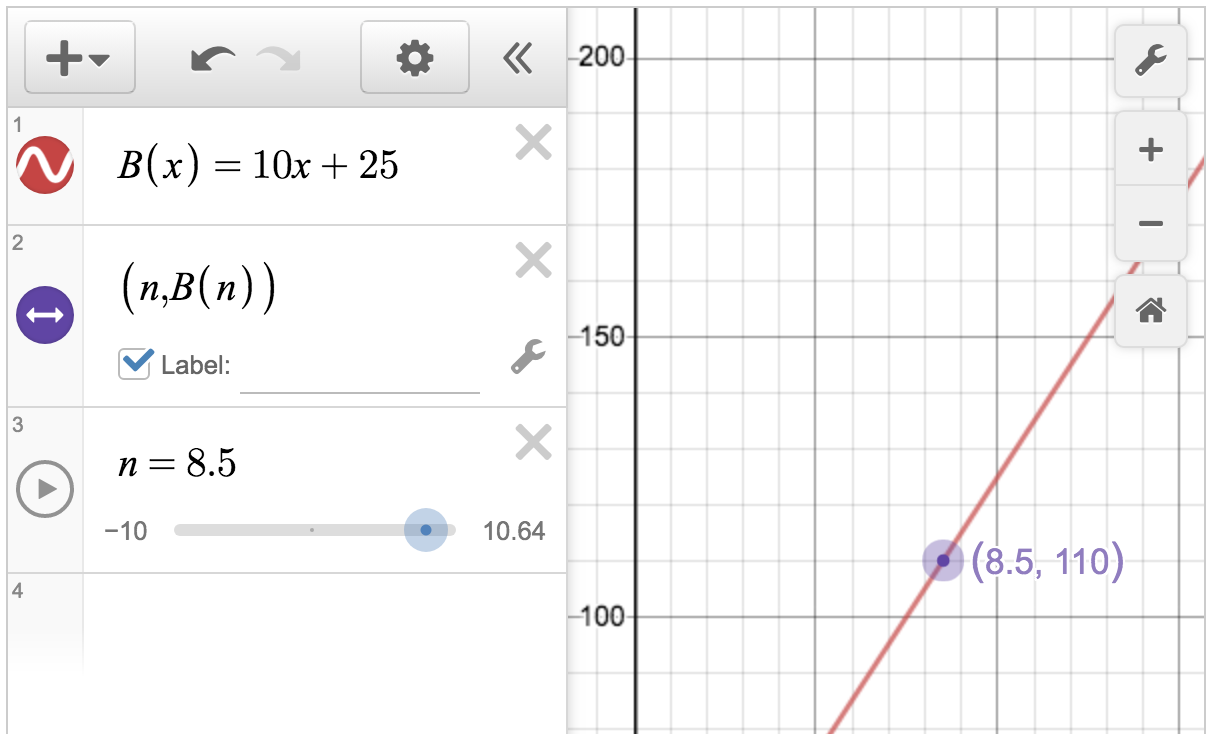
### 3 Function Notation and Graphing Technology (Optional)

#### Student Task Statement

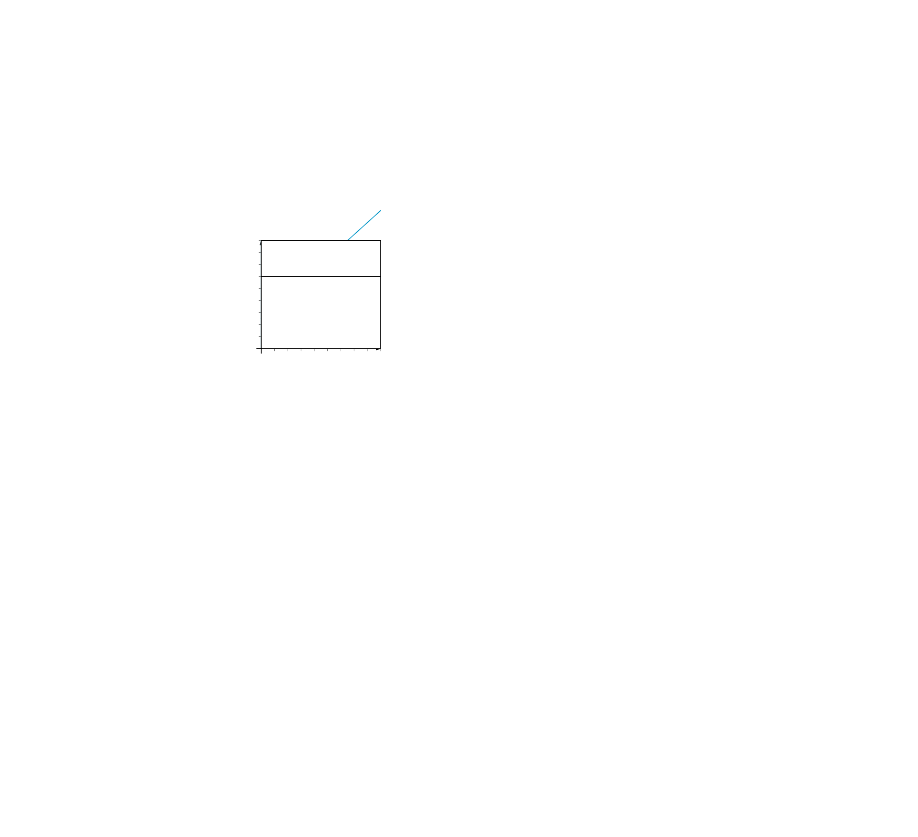
The function is defined by the equation . Use graphing technology to:

1. Find the value of each expression:
2. Solve each equation:

#### Activity Synthesis



#### Images for Activity Synthesis





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