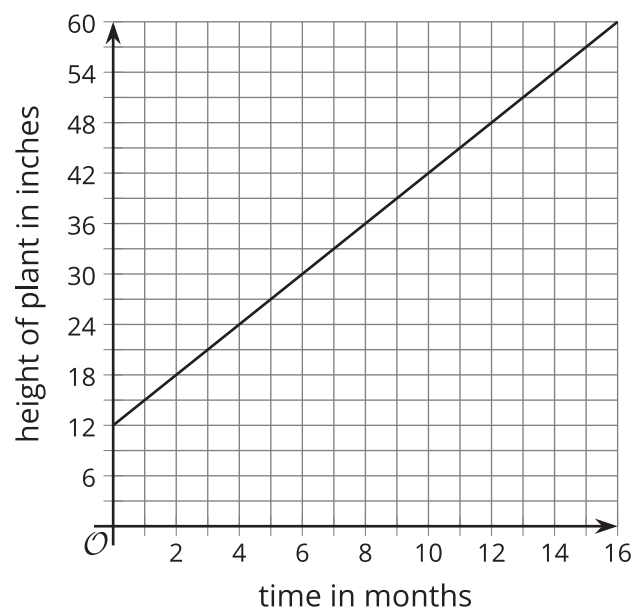


# Unit 5 Lesson 10: Rate of Change

## 1 Growing Bamboo (Warm up)

### Student Task Statement

The graph represents function  $h$ , which gives the height in inches of a bamboo plant  $t$  months after it has been planted.

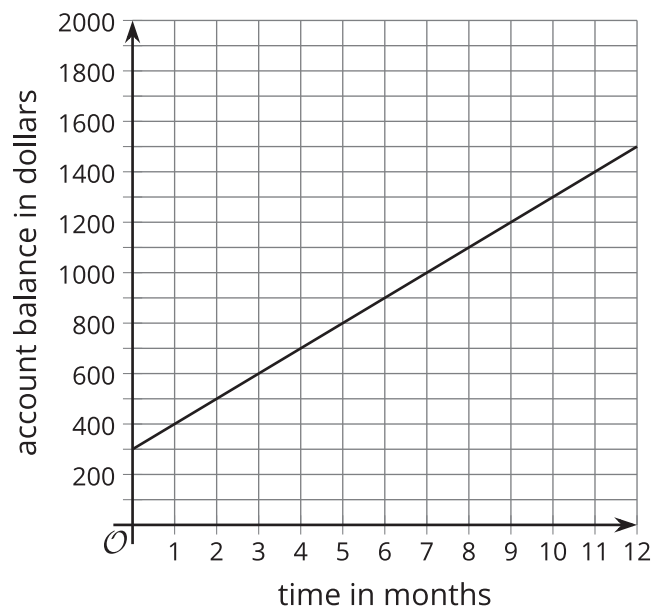


1. What does this statement mean?  $h(4) = 24$
2. What is the value of  $h(10)$ ?
3. What is  $c$  if  $h(c) = 30$ ?
4. What is the value of  $h(12) - h(2)$ ?
5. How many inches does the plant grow each month? How can you see this on the graph?

## 2 A Growing Account Balance

### Student Task Statement

The balance in a savings account is defined by the function  $b$ . This graph represents the function.



1. What is . . .

a.  $b(3)$

b.  $b(7)$

c.  $b(7) - b(3)$

d.  $7 - 3$

e.  $\frac{b(7) - b(3)}{7 - 3}$

2. Also calculate  $\frac{b(11) - b(1)}{11 - 1}$

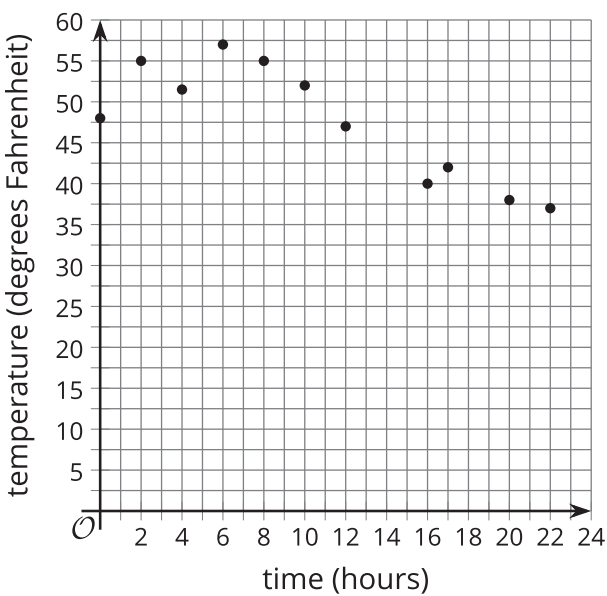
3. You should have gotten the same value, twice. What does this value have to do with this situation?

### 3 The Temperature Outside

**Student Task Statement**

Here are a graph and a table that represent the same function. The function relates the hour of day to the outside air temperature in degrees Fahrenheit at a specific location.

$t$	$p(t)$	$t$	$p(t)$
0	48	6	57
1	50	7	56
2	55	8	55
3	53	9	50
4	51.5	10	52
5	52.5		



Match each expression to a value. Then, explain what the expression means in this situation.

1.  $p(12)$

2.  $p(8)$

3.  $p(12) - p(8)$

4.  $12 - 8$

5.  $\frac{p(12)-p(8)}{12-8}$

6.  $p(10)$

7.  $p(20)$

8.  $p(10) - p(20)$

9.  $10 - 20$

10.  $\frac{p(10)-p(20)}{10-20}$

• 4

• -2.75

• 44

• -1.4

• 55

• 14

• -11

• 38

• -10

• 52