

HW L1.5

NAME _____

1. The cost of shipping a package that weighs p pounds is given by $C(p)$. Selected values of $C(p)$ are given in the table below. Based on this information, does C appear to be a linear function? How do you know?

p (in pounds)	1	3	4.5	7	9
$C(p)$ (in dollars)	\$8.10	\$9.90	\$11.25	\$13.50	\$15.30

2. Bethany is driving to Traverse City. The number of gallons of fuel, $g(m)$, in her tank after driving m miles is given by $g(m) = 13.6 - 0.037m$. Interpret the slope of the graph of g in the context of this problem.

3. H is a linear function. Which of the following expressions is equivalent to $H(11) - H(5)$?

A)

$$H(11) + H(5)$$

B)

$$\frac{H(11) - H(5)}{6}$$

C)

$$H(14) - H(8)$$

D)

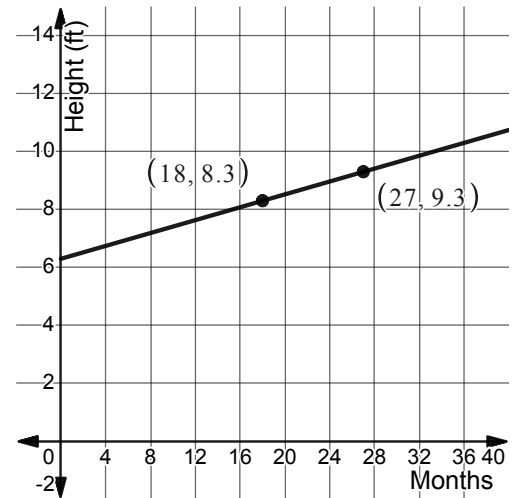
$$H(11 - 5)$$

4. Malik plants a tree and watches it grow every month. The graph shows the relationship between the height of the tree, in feet, and the number of months since it was planted.


a. If the height of the tree grows linearly, how tall will the tree be after 45 months?


b. How many years does it take for the tree to grow 6 feet?

c. How many feet does the tree grow in one year?



5. The average rate of change of a linear function, f , on the interval $[-5, -2]$ is $\frac{12}{5}$. Find $\frac{f(20) - f(10)}{10}$.

-  6. During the first 3 hours of a carnival, cotton candy is being sold at an average rate of 17 bags per hour. Later in the day, between 4 PM and 6 PM, 34 bags of cotton candy are sold. Are we guaranteed that the relationship between the number of bags of cotton candy sold and the time, in hours, is a linear function? Why or why not?

-  7. Hello Fresh delivers meal kits to your house. The table below gives information about the number of servings ordered and the total cost of the order, including shipping. There is no sales tax on these kits.

Number of servings	2	5	9	11
Total cost	\$19.29	\$33.24	\$49.81	\$57.96

Is the rate of change of the cost with respect to the number of servings increasing, decreasing, or staying constant? Explain.