

LESSON 2.1 Assignment

Name _____ Date _____

The Plane! Modeling Linear Situations

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The E & W Light Company charges their customers \$0.14 per kilowatt-hour used. The E & W Company sends the customers their bills monthly.

1. Use the scenario to complete the following questions.
 - a. Identify the independent and dependent quantities and their units for this problem situation. Explain your reasoning.

 - b. Write the independent and dependent quantities and their units in the table. Then calculate the total cost for each of the given kilowatt-hours used. In the last row of the table, write an expression to represent the dependent quantity.

	Independent Quantity	Dependent Quantity
Quantity		
Units		
	0	
	1000	
	1200	
	1400	
	1600	
	1800	
	2000	
Expression	x	

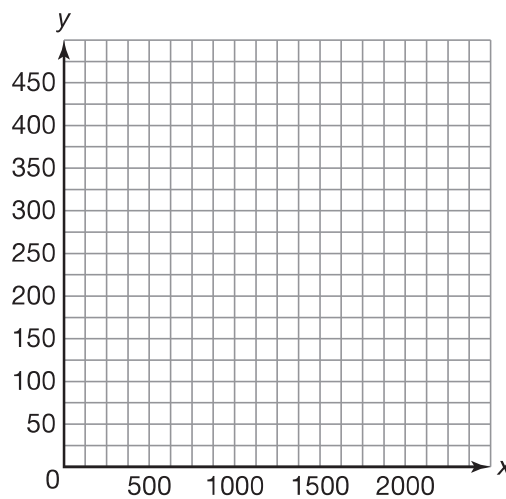
- c. Calculate the unit rate of change between three different pairs of points. What do you notice about the rates?

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2. Consider the function in the form $c(x)$ to describe the cost after using x kilowatt-hours of electricity.

a. Write the function. What function family does this represent?

b. Use the function to create a graph representing the change in the cost as a function of electricity usage. Be sure to label your axes with the correct units and write the function.



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- c. What is the slope of this graph? Describe the slope in terms of the problem situation.
- d. Identify and describe the x- and y-intercepts in terms of the problem situation.
3. Determine the cost of a monthly electric bill when 1550 kilowatt-hours are used. Explain your answer in terms of the problem situation.
4. Determine the amount of electricity used for an electricity bill that is \$300.02. Explain your answer in terms of the problem situation.

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