Name _____ Date _____

What Goes Up Must Come Down

Analyzing Linear Functions

1. Lin and her friend Thomas are collecting food for the local food bank. Their goal is to collect a total of 1785 pounds of food. They start with 225 pounds donated by a local grocery store. Their goal is to collect 20 pounds of food per day.

   a. Identify the independent and dependent quantities and their units in this situation. Then complete the table.

	Independent Quantity	Dependent Quantity
Quantity		
Units		
	0	
	10	
	15	
	25	
	48	1185
		1225
		1505
	t	

   b. Write a function $f(t)$ to represent this problem situation.

c. Identify the slope and y-intercept. Then interpret their meanings in terms of the problem situation.

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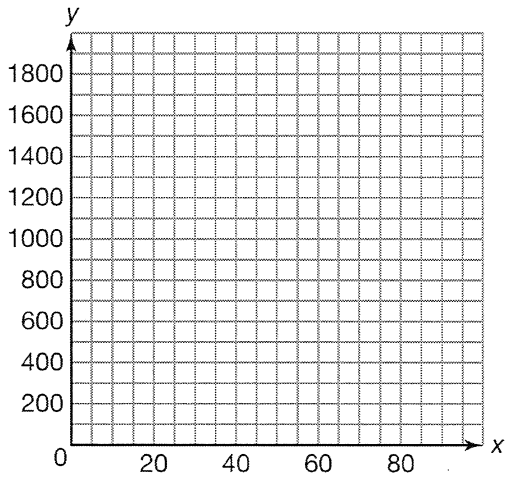
d. Estimate the number of days it will take to collect 600 pounds of food.

e. Graph the function $f(t)$ representing this problem situation on the coordinate plane.



f. Estimate the number of days it will take to collect 600 pounds of food using the graph.

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g. Algebraically determine the number of days it will take to collect 600 pounds of food.

h. Compare and contrast your solutions using the graph and the function. What do you notice? Explain your reasoning.