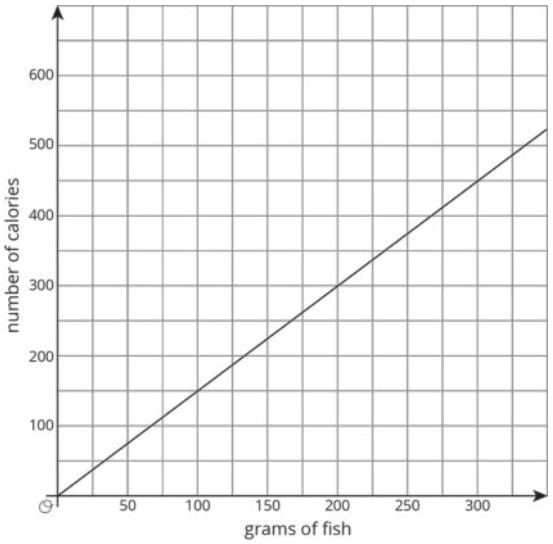
PreAlg GT – Unit 3 Assessment REVIEW NAME:_____

The Unit 3 Assessment (All Grade 8 OUR Unit 3) will cover all of the following:

- Slope:
  - Positive, Negative, Zero Slope, Undefined Slope
  - $m = \frac{y_2 - y_1}{x_2 - x_1}$
  - Defining Slope in Context of a Real World Situation
- Linear Equations
  - Graphing $y = mx + b$
  - Graphing $Ax + By = C$
  - Real world scenarios
  - Multiple Representations: Story, Table, Equation, Plot
  - Identifying if a point is on a line.

Some EXAMPLE problems to help you are on this review guide, but be sure to look at ALL OF YOUR NOTES and modules for Unit 3.

1. Here is a graph of the proportional relationship between calories and grams of fish:



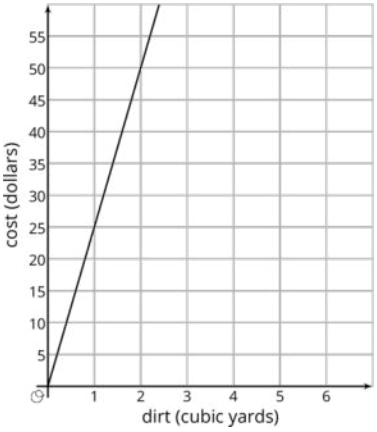
a) Write an equation that reflects this relationship using x to represent the amount of fish in grams and y to represent the number of calories.

b) Use your equation to complete the table:

	grams of fish	number of calories
row 1	1000	
row 2		2001
row 3	1	

2. A contractor must haul a large amount of dirt to a work site. She collected information from two hauling companies. EZ Excavation gives its prices in a table. Happy Hauling Service gives its prices in a graph.

	dirt (cubic yards)	cost (dollars)
row 1	8	196
row 2	20	490
row 3	26	637

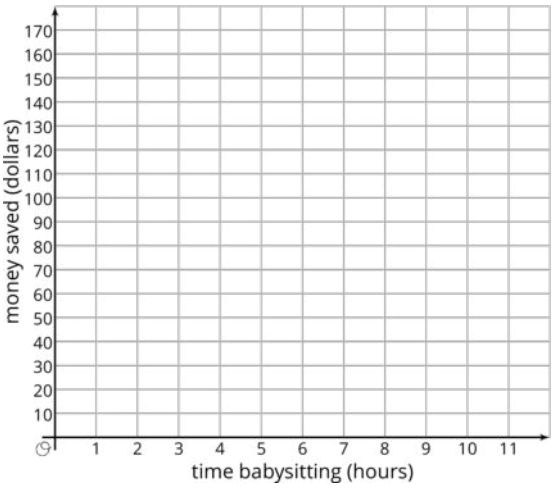


a) How much would each hauling company charge to haul 40 cubic yards of dirt? Explain or show your reasoning.

b) Calculate the rate of change for each relationship. What do they mean for each company?

c) If the contractor has 40 cubic yards of dirt to haul and a budget of $1000, which hauling company should she hire? Explain or show your reasoning.

3)



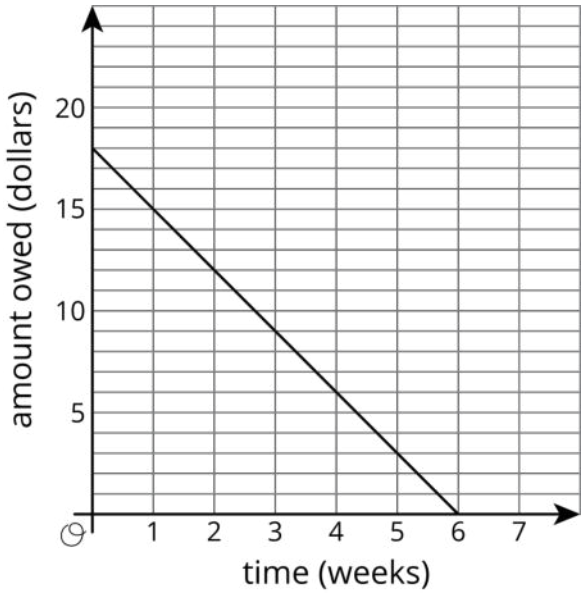
a) Diego earns $10 per hour babysitting. Assume that he has no money saved before he starts babysitting and plans to save all of his earnings. Graph how much money, y, he has after x hours of babysitting.

b) Now imagine that Diego started with $30 saved before he starts babysitting. On the same set of axes, graph how much money, y, he would have after x hours of babysitting.

c) Compare the second line with the first line. How much *more* money does Diego have after 1 hour of babysitting? 2 hours? 5 hours? x hours?

d) Write an equation for each line.

4) Elena borrowed some money from her brother. She pays him back by giving him the same amount every week. The graph shows how much she owes after each week.



Answer and explain your reasoning for each question.

a) What is the slope of the line?

b) Explain how you know whether the slope is positive or negative.

c) What does the slope represent in this situation?

d) How much did Elena borrow?

e) How much time will it take for Elena to pay back all the money she borrowed?

5) You are buying $48 worth of peanut butter and jelly. Jelly costs $4 per jar and peanut butter costs $6 per jar.

a) Write an equation that represents the different amounts of jelly, x, and peanut butter, y, that you could buy.

b) Graph the equation.

c) If you buy 5 pounds of peanut butter, how many jars of jelly can you buy?

d) What is the maximum amount of peanut butter that you can buy?

e) What is the maximum amount of jelly that you can buy?