

Lesson Context

BIG PICTURE of this UNIT:	<ul style="list-style-type: none"> • mastery with algebraic skills to be used in our work with linear functions and equations. • understanding various properties of basic functions and linear equations • how do manipulate equations with more then one variable? 		
CONTEXT of this LESSON:	<p>Where we've been</p> <p>In MS, you have been taught about various forms of lines and maybe how to work with them.</p>	<p>Where we are</p> <p>Becoming proficient with linear algebra and linear functions.</p>	<p>Where we are heading</p> <p>How can I use my knowledge of linear relationships to develop linear functions?</p>

Lesson Objectives:

- Warm Up with some old material and some new.
- POW # 3 Discussion
- Linear Brain Blast Poster!!!
- Linear Context Problems
- HW: Videos on Linear Equations

Task 1: Warm Up

1. Solve the following for x. $\frac{1}{2}x + \frac{3}{2} = 2(x - \frac{1}{3})$

2. Solve the following for y.

$$y + 5 = 2x - 11$$

$$2y = 4(2x - 5)$$

$$2y - 4 = 3x - 18$$

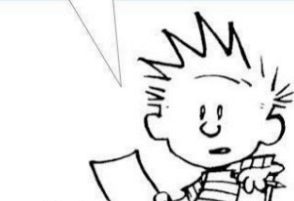
$$3y - 7x = 2x + 2$$

3.

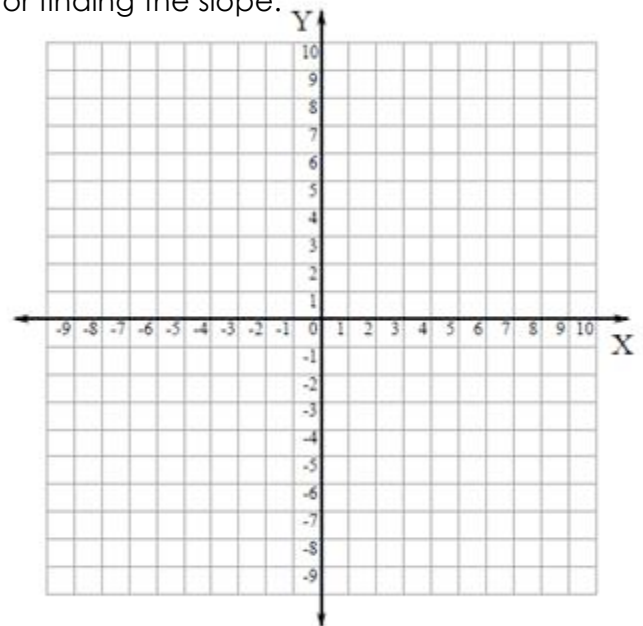
MATH QUIZ...

9=72
 8=56
 7=42
 6=30
 5=20
 3=??

Solve if you are Genius



4. Find the slope of the line **(L)** formed by the two points. (2, -2), and (6, -8). Draw a picture of the LINE. Be very accurate please. Show your work for finding the slope.



5. Another line **(K)** goes through the point (2, -2) and **is perpendicular** to the line in problem 4. Find the Slope of line **(K)** Find another point on that line and add it to your picture! Draw the new line.
6. If a new line **(P)** that is parallel to the first line **(L)**, goes through the point (0,-6), find the slope of Line (P), Draw it in the diagram, and find another point on that line.

Task 2: POW # 3 Check in/Conversation

First, take a few minutes to write down your ideas and strategies so far. Ms. A will check your progress while you do this. Then take some time to discuss POW # 3 in your groups. Record ANYTHING that you hear that helps you with this problem. Write down any additional strategies that you have come up with. Finally, complete a NEW “Egyptian fraction” problem in the space provided.

Ideas or strategies that you have for this problem.

Show Ms. A your progress at this point and get her initials in this box →

Conversations with Peers... Strategies or ideas that come up as a result.

Complete one NEW “Egyptian fraction” in this box (or you can edit one you’ve already completed). Show me that you are making progress in some way.

Get Ms. A’s initials before moving on!

Ms. A: _____

Task 3: Linear Brain Blast Poster

In this section you will need to following materials

1. Poster Paper
2. A Group of two People... choose wisely from your table of four.
3. Different color Markers
4. A ruler
5. Brain

Now complete the following tasks

Task 3.1: Write the Word LINEAR in the center of your poster clearly.

Task 3.2: Take 15 Minutes and you and your partners write as much about linear equations graphs and concepts that you can think of... include words, numbers, symbols and pictures in your poster.

Task 3.3: Take 10 minutes and search on the internet for anything linear that you can add to your poster. Add as you find things.

Task 3.4: Put your name on it and grab some tape and hang your poster up on the Window.

Task 4: Linear Context Problems

Applying Linear Skills: - Ex 1. → Renting a Car

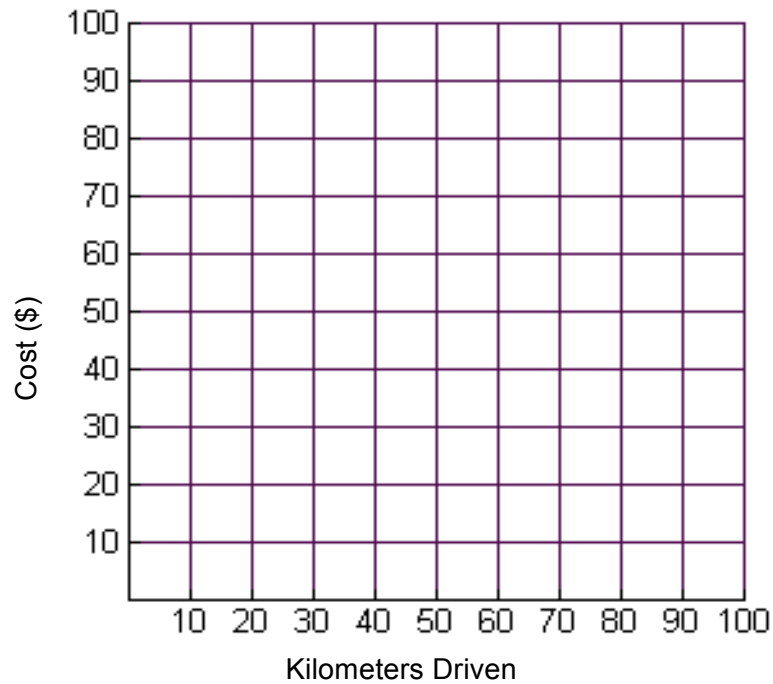
Monsour is renting a car. Zeno Car Rental charges \$45 for the rental of the car and \$0.10 per kilometer driven.

To solve the question, complete the table of values, and the graph.

Zeno

Distance (km)	Cost
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	

Zeno vs. Erdos



1. How can the car rental cost and the cost per kilometer be used to draw the graph?
2. What is the y intercept of the graph? What does it mean?
3. What is the slope of the graph? What does it mean?

Applying Linear Skills: - Ex 2. → House Values

Verbal Description:

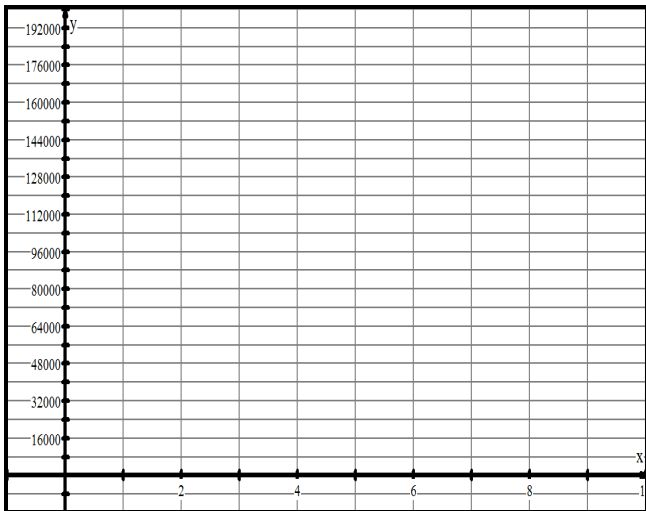
Mr. Smith has a summer cottage for which he paid \$120,000. Each year, the value of the house increases by \$8,000.

Data Table:

x						
y						

Let x = number of years since he bought the cottage.
Let y = the value of the cottage.

Graph:



Slope:

Meaning of Slope:

Y-intercept:

Meaning of y-intercept:

Equation???

Questions:

- (a) When will my cottage be worth \$200,000?
- (b) What will be the value of my cottage in 4 years time?
- (c) When will the value of my cottage be double its original value?
- (d) At what rate is the value of the house changing from year to year?