(A) Lesson Context

BIG PICTURE of this UNIT:	• mastery with algebraic manipulations/calculations involving linear relations • proficiency in working with graphic and numeric representations of lines • proficiency in working with linear relations in real world scenarios		
CONTEXT of this LESSON:	Where we've been Lesson 2 reviewed slope and y-intercept & equations of linear relations	Where we are Graphs & algebra of equations of linear relations	Where we are heading Mastery of working with equations of linear relations

(B) Lesson Objectives:

a. Review working with equations of linear relations in real world applications
b. Review working with equations of linear relations written in the form of $y = mx + b$
c. Review working with equations of linear relations written in the form of $Ax + By = C$
d. Review working with equations of linear relations written in the form of $y - y_1 = m(x - x_1)$

(C) Review Exercise #1 – Given slope & point

(a) Determine the equation of the line that passes through A(3,-2) and has a slope of -2. Write the equation in slope-intercept as well as slope-point form.

(b) Determine the equation of the line that passes through the point B(4,-2) and has a slope of $\frac{2}{3}$. Write the equation in slope-intercept as well as slope-point form.

(D) Review Exercise #2 – Given 2 points:

(a) Determine the equation of the line that passes through A(3,-2) and B(-1,-6). Write the equation in slope-intercept as well as slope-point form.

(b) Determine the equation of the line that passes through the point A(-1,2) and B(4,-2). Write the equation in slope-intercept as well as slope-point form.

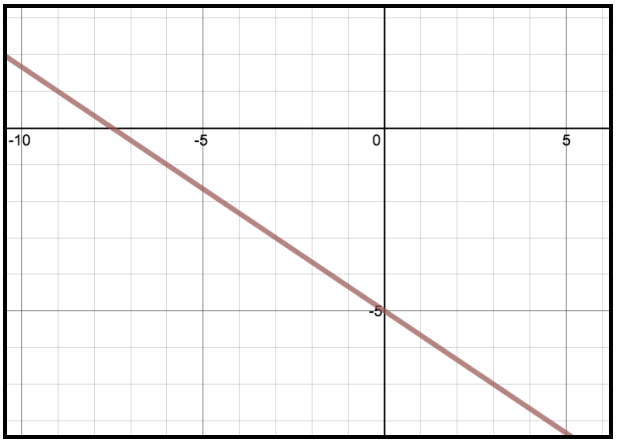
(E) Review Exercise #4 – Changing Forms:

(a) Change the equation $y - 4 = \frac{1}{3}(x + 2)$ into slope-intercept form and standard form.

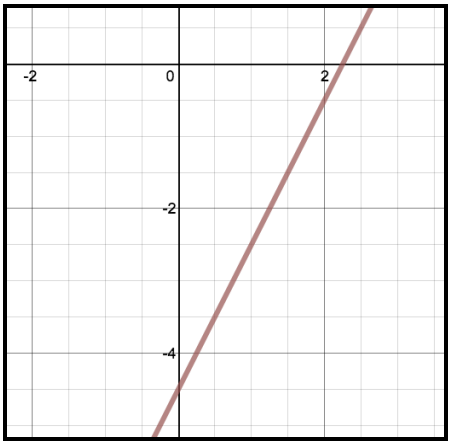
(b) Change the equation $4x - 2y - 12 = 0$ into slope-intercept form and slope-point form.

(F) Review Exercise #3 – Given a Graph:

(a) Determine the equation of the line that is shown in the diagram. Write the equation in slope-intercept as well as slope-point form.

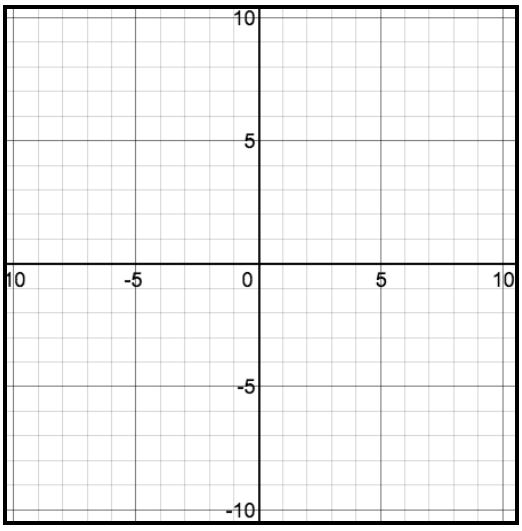


(b) Determine the equation of the line that is shown in the diagram. Write the equation in slope-intercept as well as slope-point form.

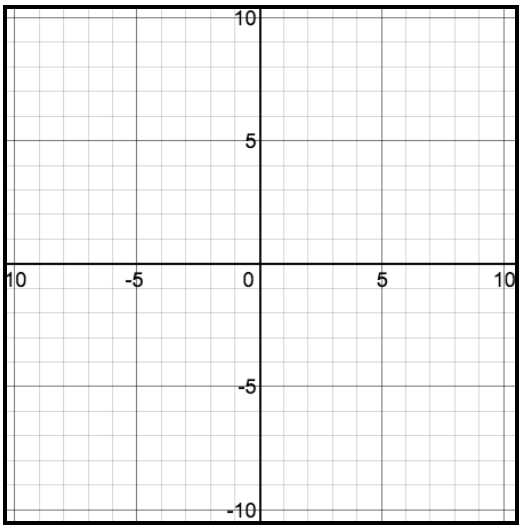


(G) Review Exercise #4 – Prepare a Graph:

(a) Graph the linear equation $y = \frac{3}{2}x - 3$ on the grid below.



(b) Graph the linear equation $y + 4 = \frac{3}{4}(x - 6)$ on the grid below.



(H) Applications of Linear Relations

1. Mr. Santowski was mowing lawns to make money for a video game! Mr. Santowski has 5 dollars in the bank. And for every lawn that he mows, he earns 3 dollars!

Equation in Slope Intercept Form:

_____

Slope = _____

What does the slope mean in the context of the problem:_____

_____

_____

Y:intercept = _____

Real world meaning of the y-intercept: ____

_____

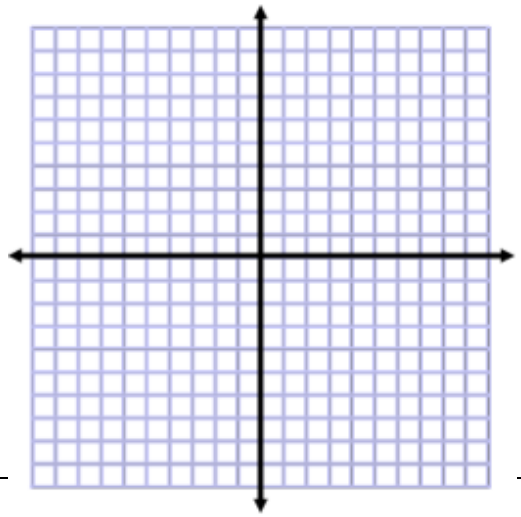
What does x represent? _____

_____

What does y represent?_____

_____

_____



If Mr. S bought a videogame for 62 dollars… how many lawns did he mow? Show your work!

Does the point (4,17) lie on this graph? What does that point mean in the real world? Show your work!

Is there a part of the graph we should not include?

2. Mr. Smith is going BALD!!! Today, he has 7,000 hairs left on his head. If he looses 100 hairs every 4 days, then create a linear equation to model this situation!

Equation in Slope Intercept Form:

_____

Slope = _____

What does the slope mean in the context of the problem:_____

_____

_____

Y:intercept = _____

Real world meaning of the y-intercept: ____

_____

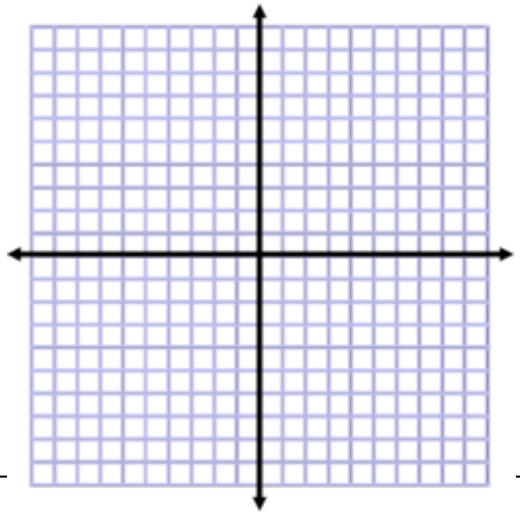
What does x represent? _____

_____

What does y represent?_____

_____

_____



On what day can Mr. Smith expect to be Bald… give me the exact calendar day! Show work

Does the point (150, 3250) lie on the graph. What is the real world meaning of this point? Show work!

How did you have to change your graph to make this one fit?...

Put the following equation into y = mx + b form. Then write a story problem that goes with the numbers of the equation.

$$y - 1500 = 25(x - 20) \rightarrow y = mx + b$$

y = _____

Story: _____

_____

_____

_____

_____

Equation in Slope Intercept Form:

_____

Slope = _____

What does the slope mean in the context of the problem:_____

_____

_____

Y:intercept = _____

Real world meaning of the y-intercept: ____

_____

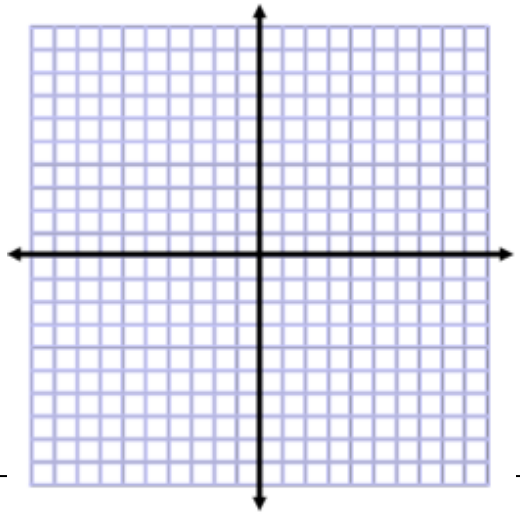
What does x represent? _____

_____

What does y represent?_____

_____

_____



Create a problem for other students to solve based off of your story problem

Create a problem that deals with a point lying on the graph… and the real world meaning of that point.

Draw a picture or a comic strip that explains your problem in detail!