Name: _____ Date: _____ Pd: _____

U7L7 – Unit 7 Review: Linear Functions 2.0

Warm Up:

Write an equation for the relationship represented in the table below:

Number of Nintendo games rented	Total Cost
0	$20
5	30
10	40
15	50
20	60
25	70

1. What is the slope and y-intercept of the line y = 2x + 3

2. A cab company charges a $3 boarding rate in addition to its meter which is $2 for every mile. Write an equation to represent the rate of this company.

Read

Today's GOAL:

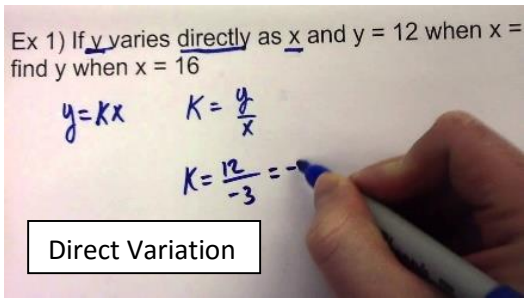
- KWBAT review all topics covered in Unit 7 by practicing a little from each topic in a variety of games, activities, and questions
- WHY? Our Unit 7 Test is Tomorrow

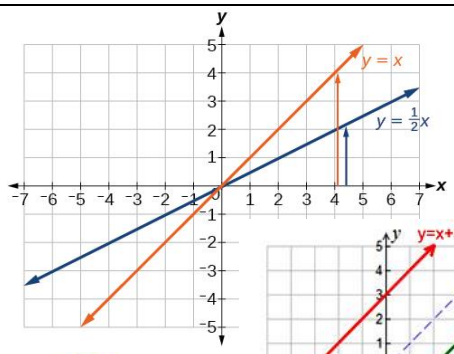
When you have finished your warm up, take out your phone or computer, go to Kahoot.it and enter the game code you see on the board

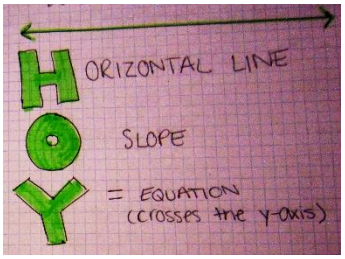
Review Checklist:

_____ **GAME**: 10 mins - Compete in the Direct Variation Kahoot! (What place did you get? _____)
_____ **GAME**: 10 mins – Compete in the Vertical and Horizontal Lines Kahoot! (What place did you get? _____)
_____ **GAME**: 10 mins – Compete in the Parallel and Perpendicular Lines Kahoot! (What place did you get? _____)
_____ **PUZZLE**: 6 mins - Complete the Puzzle of Parallels with a partner
_____ **PUZZLE**: 6 mins - Complete the Chain of Perpendiculars with a partner
_____ **PRACTICE**: LIFEWORK – Complete the back of this page as lifework (finish and check before tomorrow's test)
_____ **PRACTICE**: Check your answers to the rest of this page at **CamannMathCafe.weebly.com** under **Algebra > Unit 7**

Important to Remember:

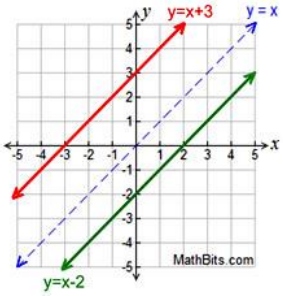


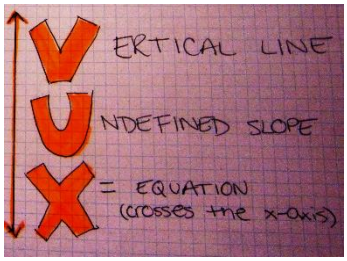




$$y = mx + b$$

Slope y-intercept





POINT-SLOPE FORM

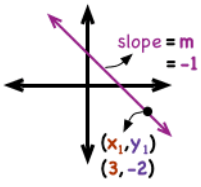
$y - y_1 = m(x - x_1)$

given m, (x_1, y_1)

m = -1 (3, -2)

$y - -2 = -1(x - 3)$

$y + 2 = -(x - 3)$



Parallel Lines

$y = 3x + 4$

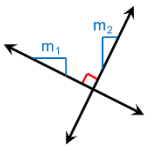
$y = 3x - 2$

The equations of two parallel lines have the same slope, but two different y-intercepts.

Perpendicular Lines in the Coordinate Plane

Two lines in the coordinate plane are *perpendicular* if they have opposite reciprocal slopes

$$m_1 = -\frac{1}{m_2}$$



Direct Variation

At Dairy Queen, the income from ice cream cones varies directly with the number of cones sold. Dairy Queen earned $30 selling 8 ice cream cones.

1. Write an equation to determine the amount of income, *y*, received from selling *x* ice cream cones.

2. Now, use your equation to calculate the income Dairy Queen can expect if they sold 478 ice cream cones.

Parallel / Perpendicular Lines

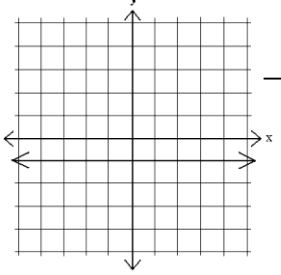
3. Write an equation for a line that is parallel to the line $y = 2x - 8$ and goes through the point (1, -3)

4. Write an equation for a line that is perpendicular to the line $y = \frac{1}{2}x + 4$ and goes through the point (4, 7)

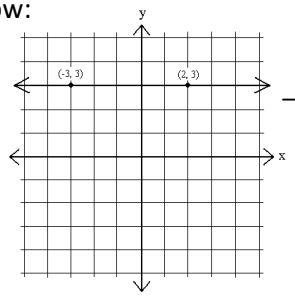
Horizontal / Vertical Lines

5. The slope of all horizontal lines is _____. The slope of all vertical lines is _____

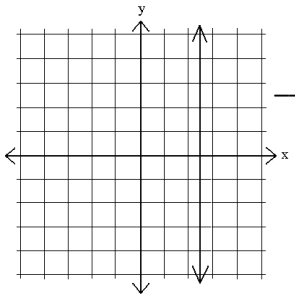
6. Write an equation for each line below:



_____



_____

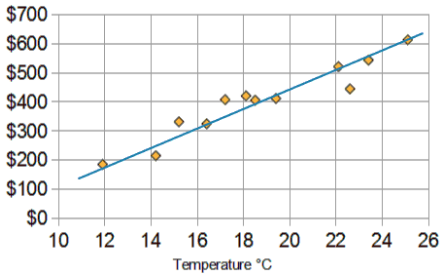


_____

Line of Best Fit

7. Using the graph on the right, write the equation for the line of best fit

8. Predict the money earned when the temperature is 21° C



Transformations on the Parent Function

Describe the transformation from the graph of $f(x) = x$ to the graph of $h(x) = x + 4$

It is translated ____ units _____
(up / down)

Describe the transformation from the graph of $f(x) = 2x - 4$ to the graph of $h(x) = 2x - 10$

It is translated ____ units _____
(up / down)

Describe the transformation from the graph of $g(x) = x$ to the graph of $m(x) = 2x - 4$

The graph will become _____ steep and will shift _____
(more / less) (up / down)

Describe the transformation from the graph of $f(x) = x$ to the graph of $g(x) = \frac{1}{3}x + 2$

The graph will become _____ steep and will shift _____
(more / less) (up / down)