Bell Ringer

Tuesday 9/17

1) What is the slope and y-intercept of the line $y = \frac{1}{3}x - 8$

Slope = $\frac{1}{3}$ Y-Intercept = -8

2) Write the equation of the given line in slope-intercept form.

$y = -\frac{1}{2}x + 2$

3) Write the equation of the line in slope-intercept form that goes through the points (-8,-10) and (4, -1)

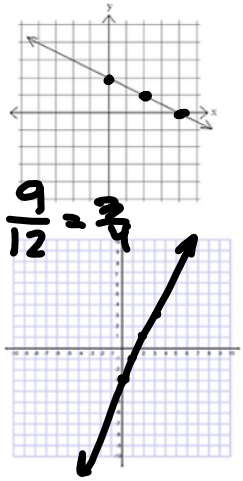
$y = \frac{3}{4}x - 4$

$\frac{-1+10}{4+8}$ $\frac{9}{12} = \frac{3}{4}$

$-1 = \frac{3}{4}(4) + b$ $-1 = 3 + b$

$-3 \quad -3$

4) Graph the line y = 2x - 3



5) Write $6x - 3y = -9$ in slope-intercept form.

$-6x \quad -6x$

$\frac{-3y}{-3} = \frac{-6x - 9}{-3}$

$y = 2x + 3$

Week #4 Packet due!!!

Rules for Transformations of Linear Functions		
Transformation	**Function**	**Description**
Horizontal Shift	g(x) = f(x + h)	*g* is *f* shifted left h units
	g(x) = f(x - h)	*g* is *f* shifted right h units
Vertical Shift	g(x) = f(x) + k	*g* is *f* shifted up k units
	g(x) = f(x) - k	*g* is *f* shifted down k units
Reflection	g(x) = -f(x)	*g* is *f* reflected across the x-axis
	g(x) = f(-x)	*g* is *f* reflected across the y-axis
Vertical Stretch/Shrink	g(x) = af(x), a > 1	*g* is a vertical stretch of *f* by a factor of a
Compress	g(x) = af(x), 0 < a < 1	*g* is a vertical shrink of *f* by a factor of a
Horizontal Stretch/Shrink	g(x) = f(ax), a > 1	*g* is a horizontal shrink of *f* by a factor of 1/a
Compress	g(x) = f(ax), 0 < a < 1	*g* is a horizontal stretch of *f* by a factor of 1/a

Describe each transformation from the graph of f to the graph of g

f(x) = 2x - 4; g(x) = f(x - 9) right 9 units

f(x) = -x/3 +3; g(x) = f(x) + 7 up 7

f(x) = x g(x) = f(x + 3) - 5 (x+h) - k

left 3, down 5

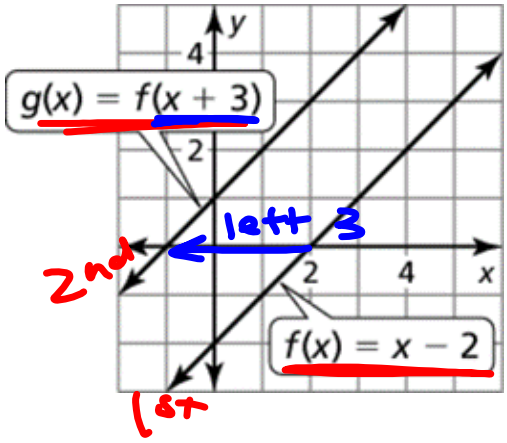
Describe each transformation from the graph of f to the graph of g

f(x) = 2x - 4; g(x) = f(x) - 15 down 15 g(x) = 2x - 19

f(x) = -x/3 +3; g(x) = f(x - 4) right 4

f(x) = x g(x) = f(x - 2) + 6 right 2 up 6

Describe the transformation from the graph of f to the graph of g



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Describe the transformation from the graph of f to the graph of g

f(x) = 4x - 1; g(x) = -f(x) reflect over x-axis

f(x) = x + 7; g(x) = f(-x) reflect over y-axis

Describe the transformation from the graph of f to the graph of g

$g(x) = a f(x)$ $a > 1$

f(x) = -x + 5; g(x) = 2f(x) v. stretch by factor of 2

f(x) = -x/4 - 1; g(x) = 2/3f(x) v. shrink by f. of 2/3

f(x) = 3x - 4; g(x) = 7f(x) v. stretch factor of 7

Describe the transformation from the graph of f to the graph of g

$g(x) = f(ax)$

$f(x) = -x + 5$; $g(x) = f(2x)$ h. shrink by factor of $1/2$

$f(x) = -x/4 - 1$; $g(x) = f(2/3x)$ h. stretch by a factor of $3/2$

$1/2/3 = 3/2$

$f(x) = 3x - 4$; $g(x) = f(7x)$ h. shrink by $1/7$

Write a function g in terms of f so the statement is true

The graph of *g* is a horizontal translation 4 units left of the graph of *f*. $g(x) = f(x+4)$

The graph of *g* is a horizontal translation 6 units right of the graph of *f*. $g(x) = f(x-6)$

Write a function g in terms of f so the statement is true

The graph of *g* is a vertical translation 12 units up from the graph of *f*. $g(x) = f(x) + 12$

The graph of *g* is a vertical translation 4 units down from the graph of *f*. $g(x) = f(x) - 4$

Write a function g in terms of f so the statement is true

The graph of *g* is the graph of *f* reflected over the x-axis

$g(x) = -f(x)$

The graph of *g* is the graph of *f* reflected over the y-axis

$g(x) = f(-x)$

Write a function g in terms of f so the statement is true

The graph of *g* is a vertical shrink by a factor of 1/2 of the graph of *f*

$g(x) = \frac{1}{2} f(x)$

The graph of *g* is a vertical stretch by a factor of 4 of the graph of *f*

$g(x) = 4 f(x)$

Write a function g in terms of f so the statement is true

The graph of *g* is a horizontal stretch by a factor of 1/2 of the graph of *f* 1/a

$g(x) = f(2x)$

The graph of *g* is a horizontal shrink by a factor of 4 of the graph of *f* 1/1/4

$g(x) = f(\frac{1}{4}x)$

3.6 Day 2 - Transformations of Linear Functions

Pg 151-154 #s 2, 6, 7, 11, 15, 19, 23, 27, 31, 35, 37, 62, 66, 68