Name: _____ Class Period: _____

2.4

Algebra I Agenda

				Stamp
Monday	10/26/2015	Objective:	Linear Parent Function	
		Assignment:	Practice #1-8	
Tuesday	10/27/2015	Objective:	Transformations Changing m	
		Assignment:	Practice #1-8	
Wednesday	10/28/2015	Objective:	Transformations Changing b	
		Assignment:	Practice #1-4	
Thursday	10/29/2015	Objective:	Transformations	
		Assignment:	Practice #1-4	
Friday	10/30/2015	Objective:	Applications	
		Assignment:	HW 2.4 Due!	

Final Weekly HW Grade: _____

Bellwork

Name: _____

Period: _____

Week of _____ - _____

Monday

thursday

Tuesday

Friday

Wednesday

CHALLENGE

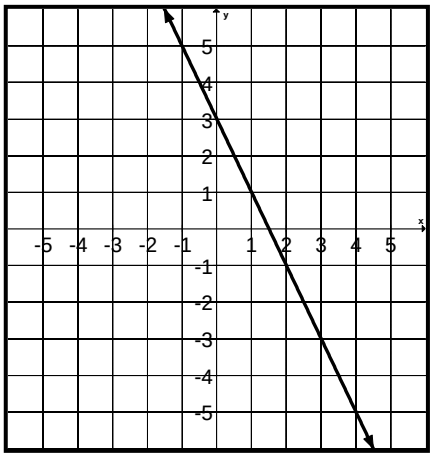
Algebra I - Unit 2: Topic 2 – Domain and Range Using Parent Functions

Practice - Domain and Range Using Parent Functions **No Textbook Correlation**

Name_____ Date _____ Per _____

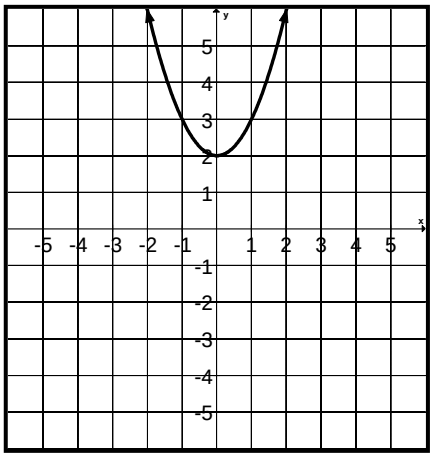
Determine whether the following functions are Linear or Not. State their Domain and Range

1.



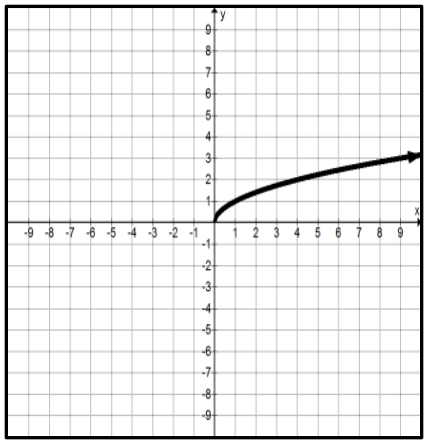
Linear or Not?	
Domain	
Range	

2.



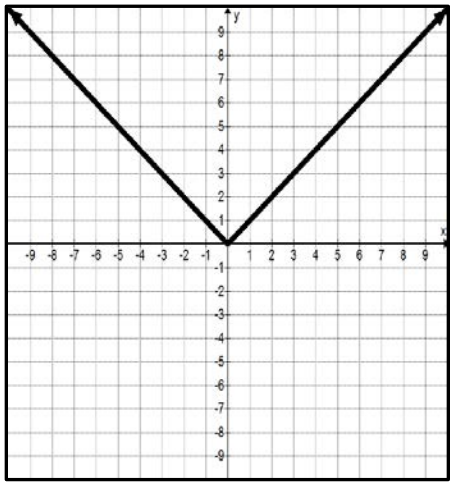
Linear or Not?	
Domain	
Range	

3.



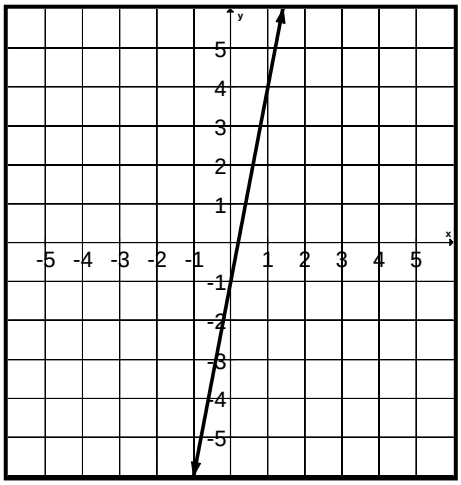
Linear or Not?	
Domain	
Range	

4.



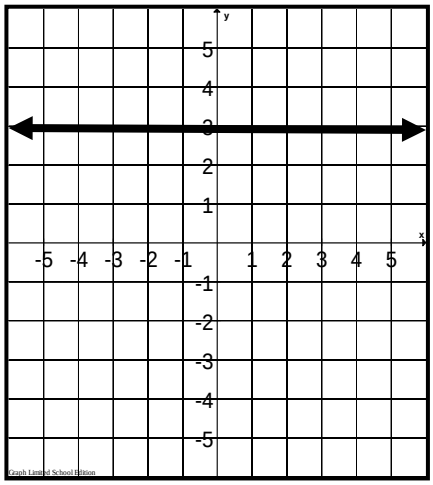
Linear or Not?	
Domain	
Range	

5.



Linear or Not?	
Domain	
Range	

6.

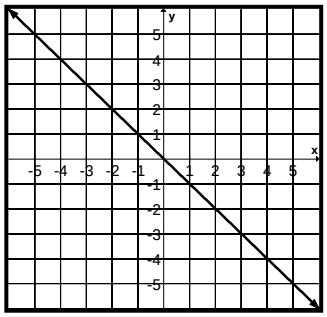


Linear or Not?	
Domain	
Range	

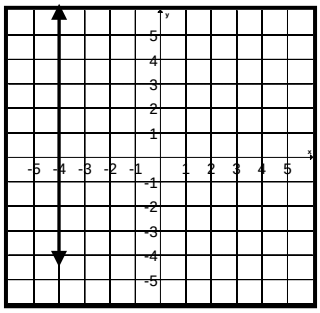
Answer the following.

7. Which graph below best represents the linear parent function?

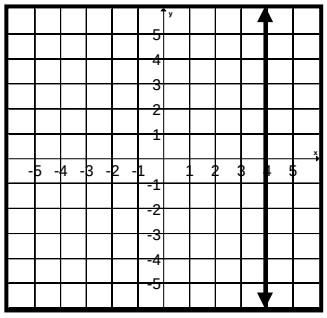
A



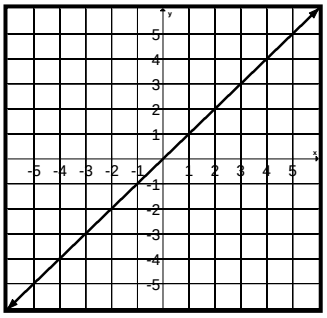
C



B

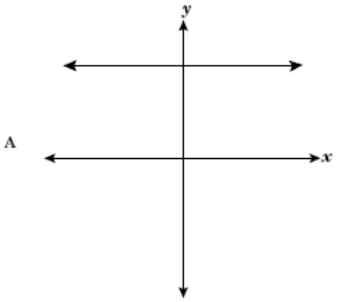


D

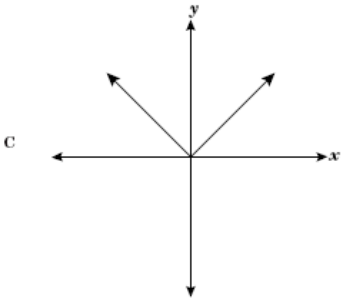


8. Which is the best representation of the function $y=x$?

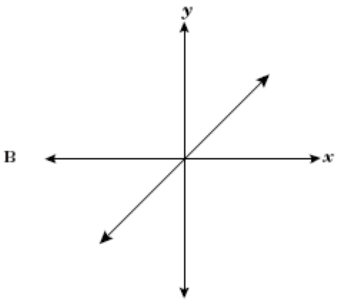
A



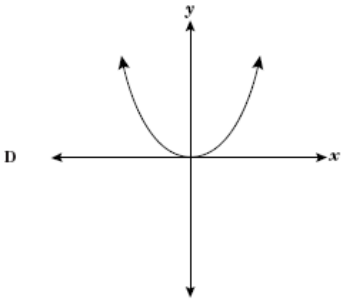
C



B



D



Practice – Changes in Slope (m)

Name _____ Date _____ Period _____

1. Describe the change of the graph of $y = x$ if the equation changes to $y = \frac{3}{5}x$.

a. The new line is steeper.
b. The new line is less steep.
c. The new line shifts up $\frac{3}{5}$ units.
d. The new shifts down $\frac{3}{5}$ units.

2. Describe the change of the graph of $f(x) = x$ if the equation changes to $g(x) = 4x$.

a. The line g(x) is the same.
b. The new line is decreasing and four times as steep.
c. The new line is increasing and four times as steep.
d. The new line is horizontal.

3. Without using a calculator, describe the change of the graph of $y = x$ if the equation changes to $y = -\frac{1}{3}x$.

a. The graph is increasing but is flatter.
b. The graph is increasing and steeper.
c. The graph is decreasing and flatter.
d. The graph is decreasing and steeper.

4. What would be the equation of the line g(x) if the line $f(x) = x + 4$ becomes flatter by a scale factor of $\frac{1}{2}$?

a. $g(x) = x - \frac{1}{2}$
b. $g(x) = -\frac{1}{2}x + 4$
c. $g(x) = x + \frac{1}{2}$
d. $g(x) = \frac{1}{2}x + 4$

5. What would be the equation of the line g(x) if the line $f(x) = x$ becomes three times steeper and is reflected?

a. g(x) = x + 3
b. g(x) = x – 3
c. g(x) = $-3x$
d. g(x) = 3 x

6. Choose all of the following options that describe the change(s) of the graph of $f(x) = 2x$ if the equation changes to $g(x) = -4x$.

a. The line g(x) is less steep
b. The line g(x) is reflected
c. The line g(x) is steeper
d. The line g(x) is shifted down.

7. Given the two linear equations, decide if each statement is TRUE or FALSE.

$f(x) = \frac{1}{5}x + 3$

$g(x) = -5x + 3$

_____ *f(x)* and *g(x)* are parallel.

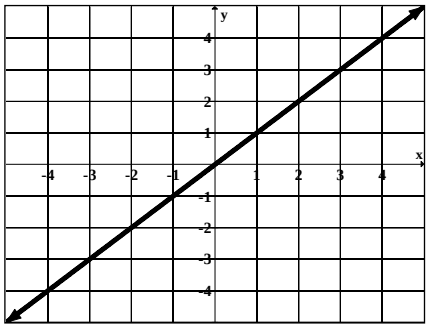
_____ *f(x)* and *g(x)* are perpendicular.

_____ *g(x)* is steeper than *f(x)*.

_____ *f(x)* is decreasing.

_____ *g(x)* is decreasing.

8. The graph below represents the parent function $y = x$.



A) From the equation above, if the slope is changed to -2, what is the equation of the new line?

B) Graph the new line on the graph above.

C) Describe the transformation from the original line to the new line.

Algebra 1 Unit 3 Transformations Day 1 (Changes in b)

Practice Transformations Day 1 (Changes in b)

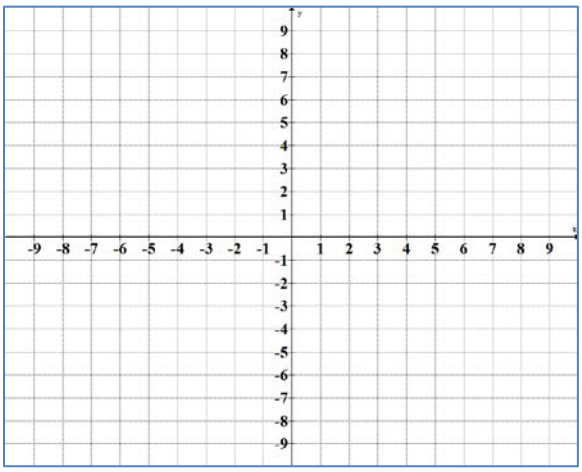
Name _____ **Date** _____

1. For each set of functions below, graph each function in a different color and answer the questions that follow.

   $f(x) = x$

   a. $f(x) = x + 4$

   $f(x) = x - 2$



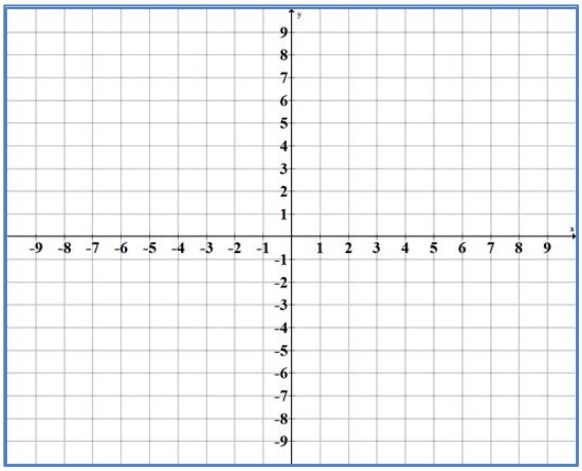
- What is changing in each equation?

- How do the lines compare to each other?

   $y = -2x + 2$

   b. $y = -2x - 5$

   $y = -2x + 4$



- What is changing in each equation?

- How do the lines compare to each other?

2. Which are **not** an effect on the graph of the parent function $f(x) = x$ for $g(x) = f(x) + 2$?

   I. The graph shifts 2 units down.

   II. The x-intercept moves to (2, 0).

   III. The y-intercept moves to (0, 2).

   IV. The graph shifts 2 units up.

   A I only

   B I, II, III

   C III and IV

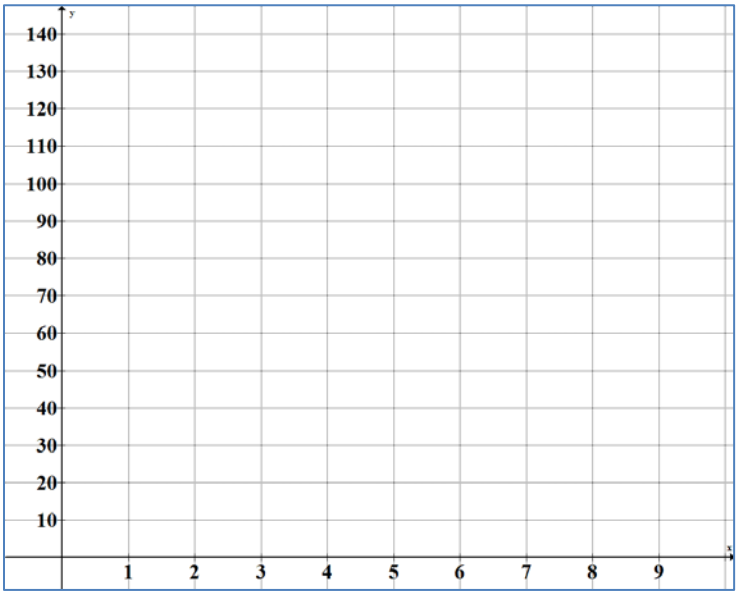
   D I and II

Algebra 1 Unit 3 Transformations Day 1 (Changes in b)

3. Luke opens a savings account and decides to put in $45. He wants to add $15 to the account each week.
   a) Write an equation that represents y, the amount of money in Luke's savings, as a function of x, the numbers of weeks since he opened the account.

   b) What would the equation be if Luke had put in $60 when he opened his account?

   c) **Graph** both equations and **describe** the transformation from part a) to part b).



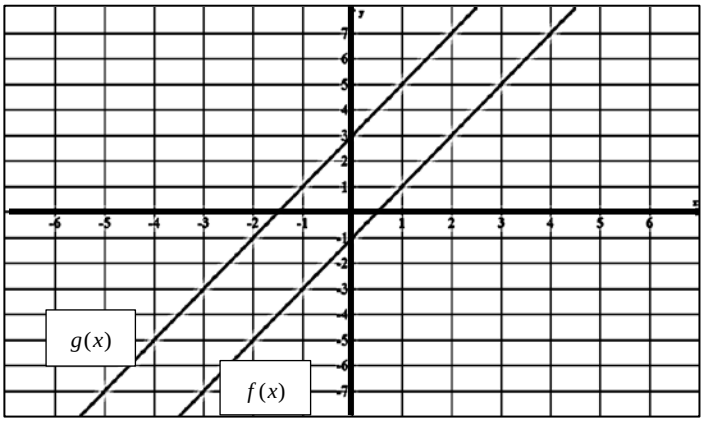
4. For the function $f(x) = x + 2$,
   - How does $f(x) = x + 2$ compare to the linear parent function $f(x) = x$?
   - How would the graph change if the +2 in the equation was changed to a +6?
   - What if the +2 was changed to a -2?
   - What is the relationship between these two lines?

Algebra I - Unit 3: Topic 2 – Changes of *m* & *b*

Practice – Changes in m & b **pp 357-360**

Name _____ Date _____ Period _____

1. Functions $f(x)=2x-1$ and $g(x)$ are graphed below. Use the graph to answer the following questions.



a. Which of the following describes the transformations performed on $f(x)=2x-1$ to obtain $g(x)$?

A. $f(x)$ was shifted 3 units up to obtain $g(x)$

B. $f(x)$ was shifted 3 units down to obtain $g(x)$

C. $f(x)$ was shifted 4 units up to obtain $g(x)$

D. $f(x)$ was shifted 4 units down to obtain $g(x)$

b. Which of the following describes the function rule for $g(x)$?

A. $g(x)=2x-1$

B. $g(x)=2x+3$

C. $g(x)=2x+4$

D. $g(x)=3x$

c. Which of the following describes how $g(x)$ relates to $f(x)$?

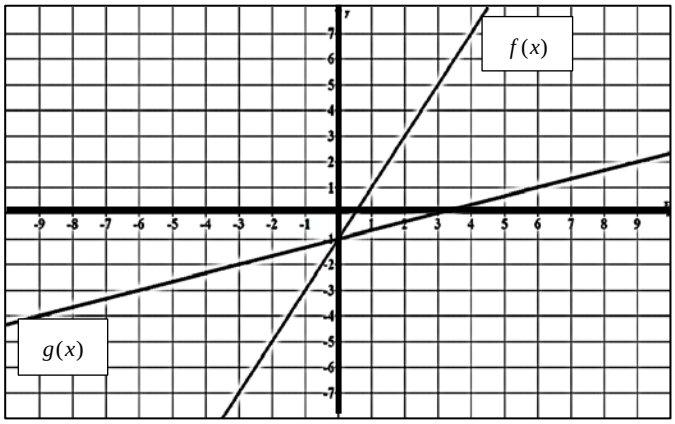
A. $g(x)=f(x)-1$

B. $g(x)=f(x)+3$

C. $g(x)=f(x)+4$

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

2. Functions $f(x)=2x-1$ and $g(x)$ are graphed below. Use the graph to answer the following questions.



a. Which of the following describes the transformations performed on $f(x)=2x-1$ to obtain $g(x)$?

A. $f(x)$ was shifted 5 units up to obtain $g(x)$

B. $f(x)$ was shifted 5 units down to obtain $g(x)$

C. $f(x)$ was made steeper to obtain $g(x)$

D. $f(x)$ was made flatter to obtain $g(x)$

b. Which of the following describes the function rule for $g(x)$?

A. $g(x)=2x-1$

B. $g(x)=\frac{1}{3}x-1$

C. $g(x)=2x-3$

D. $g(x)=3x-1$

c. Which of the following describes how $g(x)$ relates to $f(x)$?

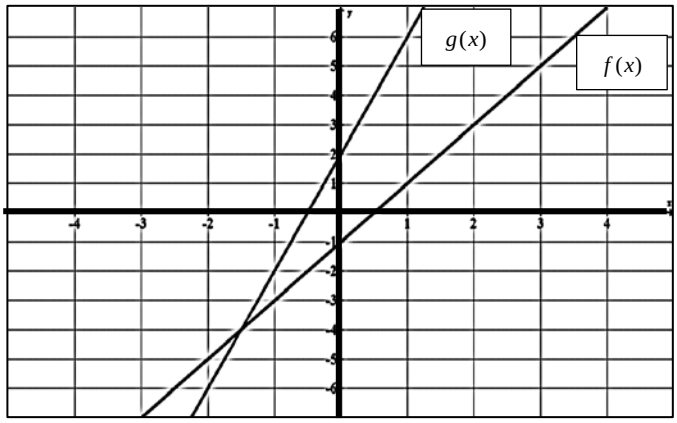
A. $g(x)=\frac{1}{3}f(x)$

B. $g(x)=f\left(\frac{1}{3}x\right)$

C. $g(x)=\frac{1}{6}f(x)$

D. $g(x)=f\left(\frac{1}{6}x\right)$

3. Functions $f(x)=2x-1$ and $g(x)$ are graphed below. Use the graph to answer the following questions.



a. Which of the following describes the transformations performed on $f(x)=2x-1$ to obtain $g(x)$?

A. $f(x)$ was shifted 3 units up and made steeper to obtain $g(x)$

B. $f(x)$ was shifted 2 units up and made steeper to obtain $g(x)$

C. $f(x)$ was shifted 3 units down and made flatter to obtain $g(x)$

D. $f(x)$ was shifted 2 units down and made flatter to obtain $g(x)$

b. Which of the following describes the function rule for $g(x)$?

A. $g(x)=\frac{1}{4}x+3$

B. $g(x)=4x+3$

C. $g(x)=\frac{1}{4}x+2$

D. $g(x)=4x+2$

c. Which of the following describes how $g(x)$ relates to $f(x)$?

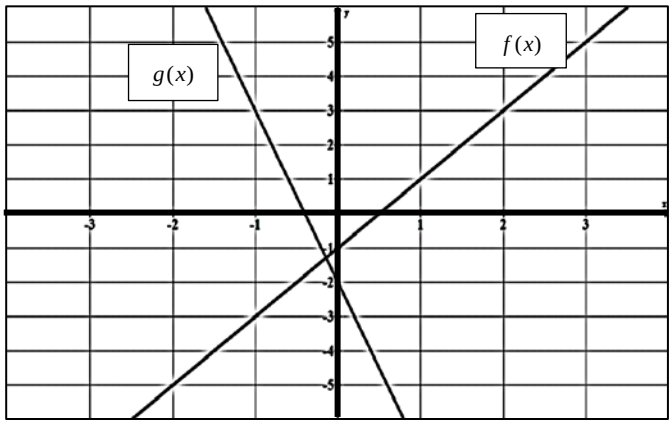
A. $g(x)=f(2x)+2$

B. $g(x)=2f(x)+2$

C. $g(x)=f(2x)+3$

D. $g(x)=2f(x)+3$

4. Functions $f(x)=2x-1$ and $g(x)$ are graphed below. Use the graph to answer the following questions.



a. Which of the following describes the transformations performed on $f(x)=2x-1$ to obtain $g(x)$?

A. $f(x)$ was shifted 1 unit up, reflected and made steeper to obtain $g(x)$

B. $f(x)$ was shifted 1 unit down, reflected and made steeper to obtain $g(x)$

C. $f(x)$ was shifted 1 unit up, reflected and made flatter to obtain $g(x)$

D. $f(x)$ was shifted 1 unit down, reflected and made flatter to obtain $g(x)$

b. Which of the following describes the function rule for $g(x)$?

A. $g(x)=-5x-2$

B. $g(x)=5x-2$

C. $g(x)=-5x-1$

D. $g(x)=5x-1$

c. Which of the following describes how $g(x)$ relates to $f(x)$?

A. $g(x)=-\frac{1}{10}f(x)-1$

B. $g(x)=f\left(-\frac{1}{10}x\right)-1$

C. $g(x)=\frac{1}{10}f(x)-1$

D. $g(x)=f\left(\frac{1}{10}x\right)-1$