Algebra I Skill C-3: Translating Rate & Initial Value

First Assessment

Name:_____

Team:_____Period:_____

Date:_____

GRADING SCALE								
8 = 100%	7 = 92%	6 = 86%	5 = 80%	4 = 75%	3 = 70%	2 = 65%	1 = 61%	0 = 50%
Consistently *organize*, *represent* math, *use* math language, and communicate in a way **Clear & Coherent**		Usually *organize*, *represent* math correctly, *use* math language, and communicate in a way **Usually Coherent**		Adequately *organize* and *represent* math, *use* some math language, and communicate in a way **Not Always Coherent**		*Use* limited math representation and language, communicate in a way **Difficult To Understand**		None of the previous

1) Find each requested quantity.

Situation:

David tutors for a living. He charges $100 to start working with a student, plus $60 per hour.

Rate: _____ Initial Value: _____

Coefficient: _____ Constant: _____

Y-Intercept: _____ Slope: _____

Equation:

$f(x) = 97 - 15x$

Rate: _____ Initial Value: _____

Coefficient: _____ Constant: _____

Y-Intercept: _____ Slope: _____

Table:

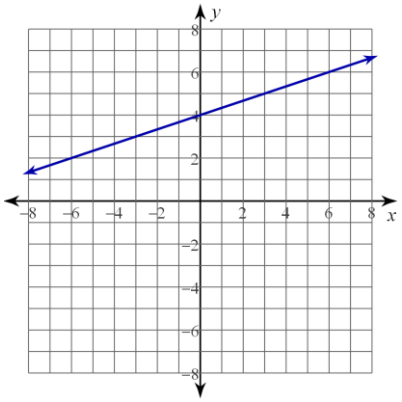
x	$f(x)$
0	-8
2	-2
5	7
7	13

Rate: _____ Initial Value: _____

Coefficient: _____ Constant: _____

Y-Intercept: _____ Slope: _____

Graph:



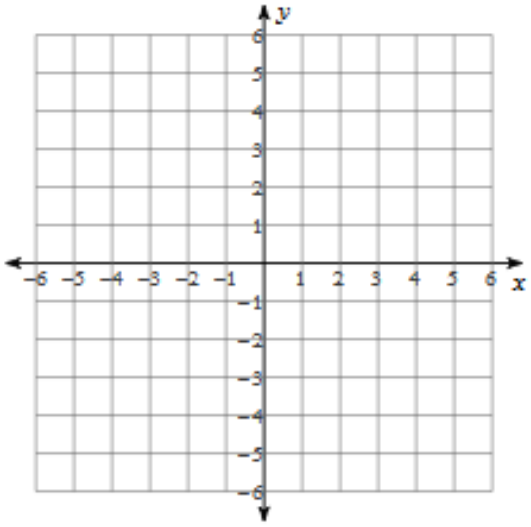
Rate: _____ Initial Value: _____

Coefficient: _____ Constant: _____

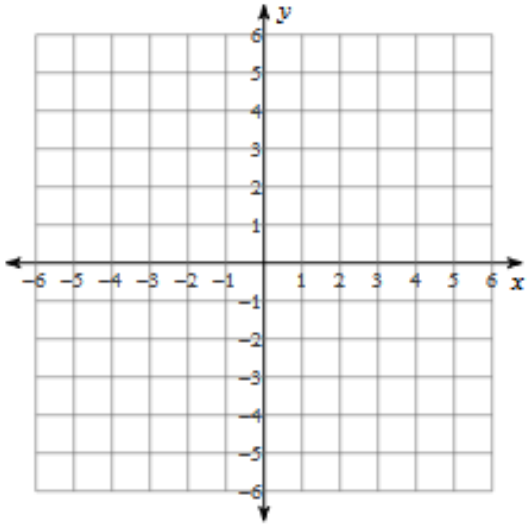
Y-Intercept: _____ Slope: _____

Sketch the graph of each line.

2) $y = -\frac{2}{5}x + 3$

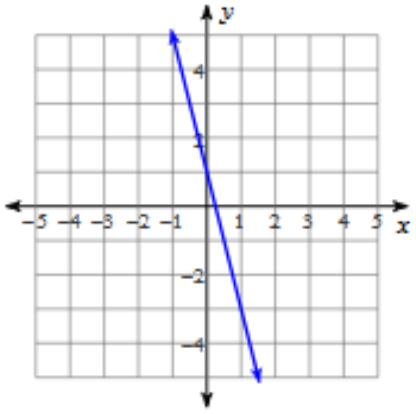


3) $y = x + 1$

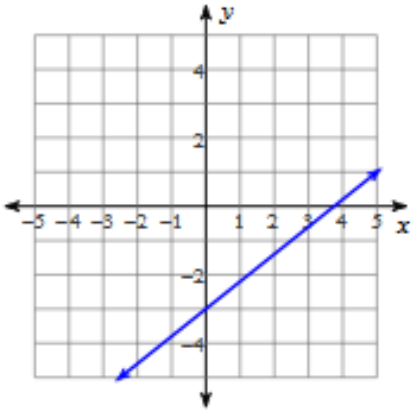


Write the slope-intercept form of the equation of each line.

4)



5)



6) Read the following situation, and create a graph, table, and equation to match that situation.

Situation:

A horse starts 35 feet away from a stable, and walks ***towards the stable*** – *decreasing* its distance – at a rate of 7 feet per second.

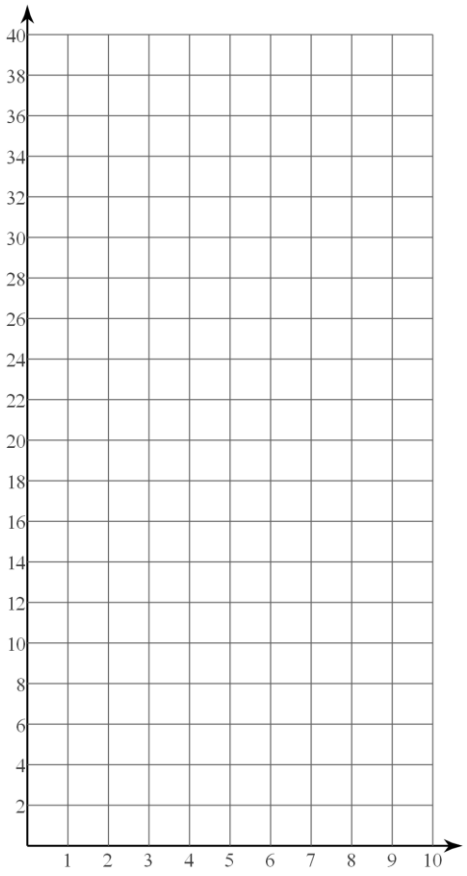
Equation:

_____

Table:

x	$f(x)$
0	
1	
2	
3	
4	
5	
6	
7	

Graph: *(be sure to add labels & title)*



Algebra I Skill A-5: Systems of Standard Form Equations

First Assessment

Name:_____

Team:_____Period:_____

Date:_____

GRADING SCALE								
8 = 100%	7 = 92%	6 = 86%	5 = 80%	4 = 75%	3 = 70%	2 = 65%	1 = 61%	0 = 50%
Select math, *apply* math, and *solve*: **Unfamiliar Problems**		*Select* math, *apply* math, and *solve*: **Challenging Problems**		*Select* math, *apply* math, and *solve*: **Complex Problems**		*Select* math, *apply* math, and *solve*: **Simple Problems**		None of the previous

Simple Problems **Level: 1-2**

1) Convert this situation into a system of standard form equations. You do NOT need to solve it, just WRITE it!

A band is selling two versions of their new album – a $10 version, the normal album, and a $13 version, with extra songs. Today, on their website, they got 100 orders and made $1036. How many were normal orders, and how many were bonus orders?

a. Define your variables:

b. Write two equations:

Complex Problems **Level: 3-4**

2) Solve this system:

$5x + 6y = 62$
$3x - 6y = 18$

3) Convert this situation into a system of standard form equations and solve it!

When Mr. Eckel lived in Los Angeles, he really liked a burger restaurant called the "Press Box". The first time he went to the Press Box, he and one friend of his each got a burger and fries. The two burgers and two orders of fries cost $22 total. The second time, a larger group of his friends ordered five burgers and four orders of fries. That cost $52 total. How much is one burger and one order of fries at the Press Box?

a. Define your variables:

b. Write two equations:

c. Solve your system, and ***explain your answer*** in the context of the original problem.

Challenging Problems **Level: 5-6**

4) Solve this system:

$-16x - y = -24$
$8x - 2y = -8$

5) Solve this system:

$5x - 9y = 2$
$-6x - 2y = -28$

Unfamiliar Problem **Level: 7-8**

When he was a kid, Mr. Eckel invented a game called Ladder. (It was a pretty bad game.) It went like this. There was a drawing of a ladder with 25 rungs on it, and the player started with a marker on rung number 10. Then, the player flipped a coin. If they got heads, they went 3 spaces higher (like, from rung 10 to rung 13). If they got tails, they went 2 spaces lower (like, from rung 10 to rung 8). To win, a player had to make it all the way to rung 25 in only 20 coin flips. If they ever reached rung 1, they automatically lost.

Imagine playing this game. After flipping the coin 15 times, you're on rung 15. (Don't forget, you start on rung 10). How many coin flips were heads? How many were tails?

Algebra I Skill D-2: Systems of Inequalities

First Assessment

Name:_____

Team:_____Period:_____

Date:_____

GRADING SCALE								
8 = 100%	7 = 92%	6 = 86%	5 = 80%	4 = 75%	3 = 70%	2 = 65%	1 = 61%	0 = 50%
Identify math, *apply* math, *find* a valid solution, and **Fully Explain the Solution In Context**		*Identify* math, *apply* math, *find* a valid solution, and **Describe the Accuracy of the Solution**		*Identify* math, *apply* math, *find* a solution, and **State if the Solution Makes Sense**		*Identify* some math, *apply* math with limited success, and **Find a Solution**		None of the previous

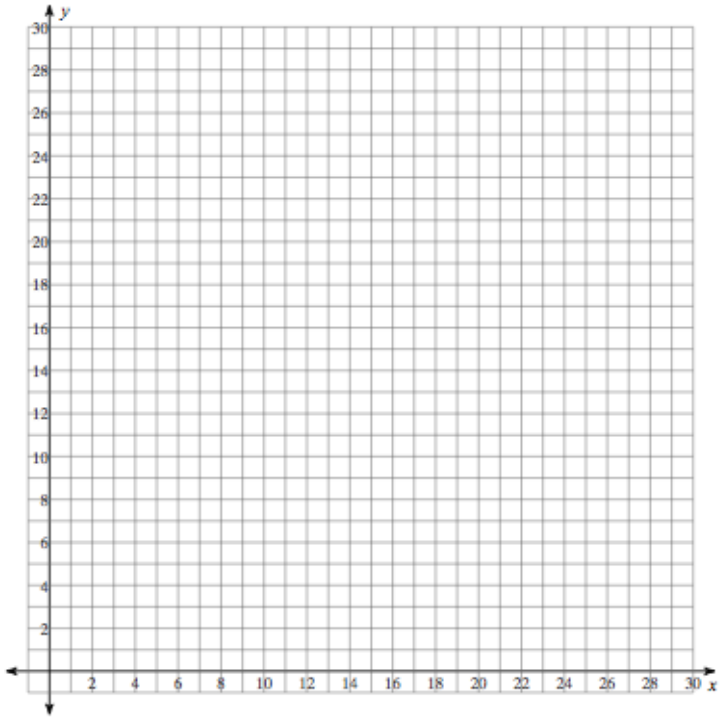
A men's clothing store is having a sale. There are two discount racks – every shirt on the first rack costs $20, and every shirt on the second rack costs $30. You want to spend at most $600 and buy at least 25 shirts. How many of each kind can you get?

What two kinds of information are being considered in this problem?

Define your variables:

Create a system of inequalities to model the situation:

Make a **TITLE** and **LABELS FOR EACH AXIS** and then graph.



Pick one solution to this system:	Pick a second solution to this system:	Pick a third solution to this system:
What does the solution mean, in the context of shopping at the store?	What does the solution mean, in the context of shopping at the store?	What does the solution mean, in the context of shopping at the store?
How many shirts is this total?	How many shirts is this total?	How many shirts is this total?
How much would you spend total?	How much would you spend total?	How much would you spend total?

Look at the three solutions you found on the front. Which one of the three solutions do you think is the one you would actually choose in that situation? Why?

What other information that we didn't consider in this problem might be important for a real person making a decision to buy shirts?