Algebra 1/2

Semester 2

Name _____

Final Retention Exam Review

Period _____ Date _____

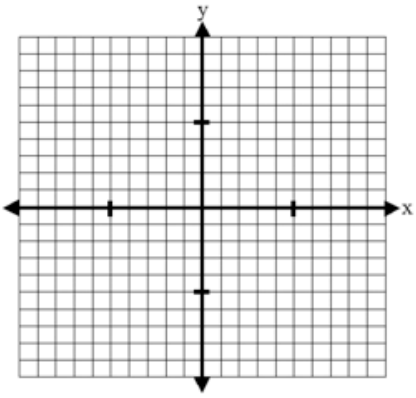
Units of Study:		Worksheets:	Quizzes & Tests:
Unit 6	Systems of Equations		Quiz 6 & Test 6
Unit 7	Inequalities		Test 7
Unit 8	Exponents & Exponential Functions		Quiz 8 & Test 8
Unit 9	Quadratics		Tests 9 Part 1 & 2

Unit 6 Learning Targets: Systems of Equations - I can model linear systems in multiple ways (equations, graphs, tables). - I can solve linear systems using algebra (equal values, substitution, elimination). - I can solve any system using graphing.	**No Evidence (1)**	**Working Towards (2)**	**Close to Proficient (2.5)**	**Proficient (3)**

Solve by graphing.

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

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



Solution: _____

Solve by making a table.

2. $y = 4x - 6$

$y = -6x + 14$

x	y = 4x - 6	y = -6x + 14
0		
1		
2		
3		
4		

Solution: _____

Solve by substitution.

3. $y = -x - 7$

$5y + 3x = -13$

Solve by elimination

4. $c + b = -11$

$3c - 6b = -6$

Solve using any method.

5. $-3x-4y=2$
$3x+3y=-3$

6. $2x+2y=18$
$x=3-y$

STOP and check your answers for Unit 6 on page 1. Give yourself a score, and then fix any errors.

Unit 7 Learning Targets: Inequalities - I can create inequalities in one variable to represent constraints and solve problems. - I can use inequalities to determine which points are viable solutions - I can graph the solutions to one-variable inequalities on the number line and a system of linear inequalities of two half-planes.	**No Evidence (1)**	**Working Towards (2)**	**Close to Proficient (2.5)**	**Proficient (3)**

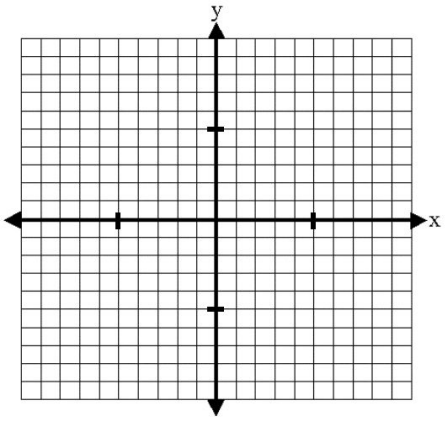
Solve and graph the inequalities.

1. $2x + 3 > 9$

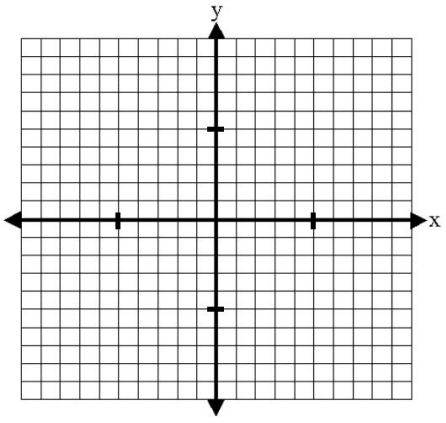
2. $-3x + 4 \geq 7$

Graph the inequalities.

3. $y < \frac{2}{3}x - 5$



4. $y \geq -3x + 8$



5. Identify one solution for #4: _____

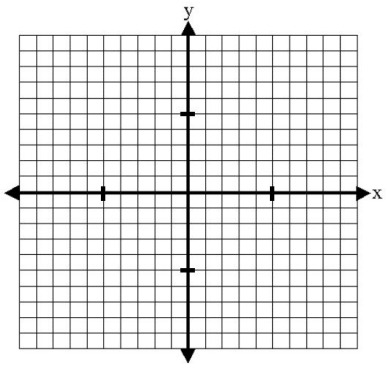
Solve and graph the inequality.

6. $5 > 2x - 10 + 3x$

Solve the system of inequalities.

7. $3x + y > 5$

$y \leq x - 2$



8. Identify one solution for #7: _____

STOP and check your answers for Unit 7. Give yourself a score, and then fix any errors.

Unit 8 Learning Targets: Exponents & Exponential Functions - I can write, represent, evaluate, and solve exponential functions using a table, graph, or situation. - I can explain the properties of negative, fractional, and zero exponents - I can identify which situations can be modeled with an exponential function.	**No Evidence (1)**	**Working Towards (2)**	**Close to Proficient (2.5)**	**Proficient (3)**

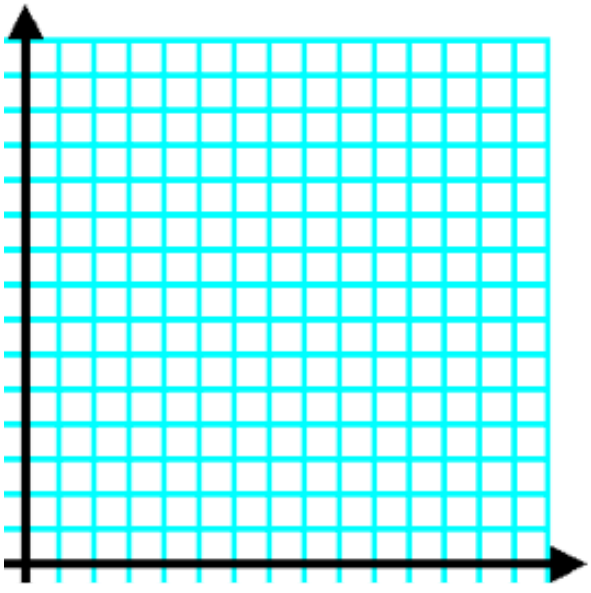
1. Complete the table and graph the equation $y = 2 \cdot 5^x$ below. Label your axes.

a.

x	$y = 2 \cdot 5^x$
0	
1	
2	
3	

b. Is this exponential growth or decay? Explain.

c.



2. For each of the problems below, **write** an equation.

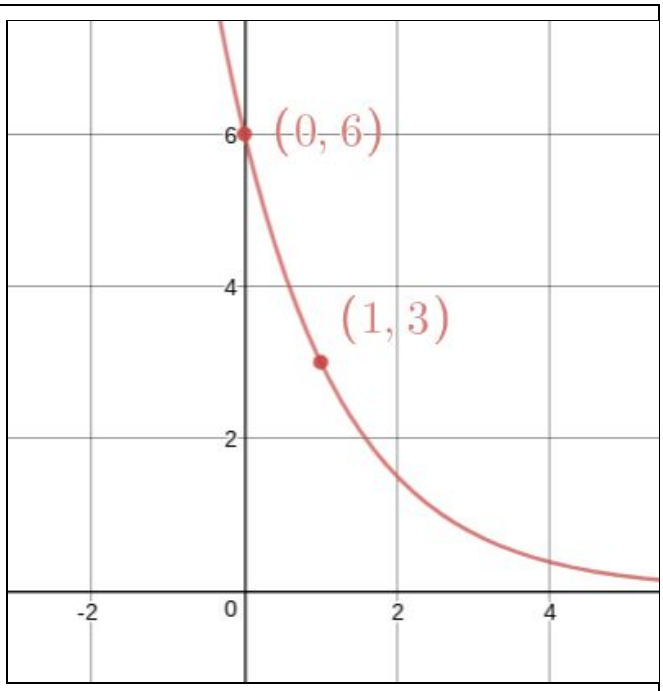
a.

x	y
0	0.5
1	3
2	18
3	108

y = _____

Check that your equation works:

b.



y= _____

3. Use exponent properties to simplify the following expressions. Your answers should have no negative or zero exponents, and should be as simple as possible.

a. $x^2 \cdot x^3$

b. $\frac{x^5}{x^2}$

c. $x^{-3} \cdot x^7$

d. $(x^3)^4$

e. $\frac{x^4}{y^4}$

f. $x^3 \cdot x^{-7}$

STOP and check your answers for Unit 8. Give yourself a score, and then fix any errors.

Unit 9 Learning Targets: Quadratics - I can write quadratic functions in standard, vertex, or factored form to model real-world and mathematical situations - I can graph quadratic functions given a table or equation in any form - I can solve quadratic equations algebraically or graphically	**No Evidence (1)**	**Working Towards (2)**	**Close to Proficient (2.5)**	**Proficient (3)**

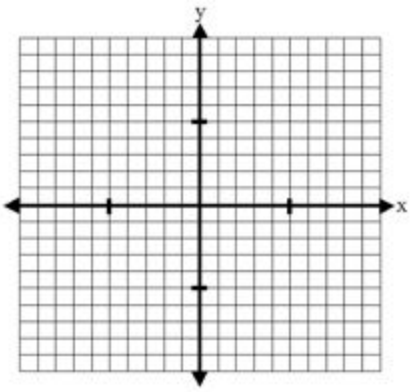
Solve the following equations. Check your work.

1. $x^2 = 81$
2. $(x + 3)^2 = 49$
3. $(x - 2)^2 = 36$

Graph the equation and identify the characteristics.

4. $y = (x - 5)(x - 3)$

x	y = (x - 5)(x - 3)
2	
3	
4	
5	
6	



Vertex: _____

A.O.S. _____

x-intercept(s): _____

y-intercept: _____

Change these equations from factored form to standard form by multiplying. Use any method (area model or EWE).

5. $y = (x + 3)(x + 5)$
6. $y = x(x - 8)$

Solve.

7. $(x - 5)^2 + 8 = 44$
8. $-2(x + 7)^2 - 5 = -133$
9. $2x^2 = 288$

Solve by factoring:

1. $x^2 + 6x + 8 = 0$

$(x + \quad)(x + \quad) = 0$

2. $x^2 - 7x + 12 = 0$

Solve by factoring GCF first:

3. $x^2 - 17x = 0$

Change to Standard Form by multiplying:

3. $y = (x - 3)(x - 4)$

4. $y = (x + 4)^2$

y = _____

y = _____

Proficient (3)/Highly Proficient(4):

Solve by factoring:

5. $2x^2 - 6x - 8 = 0$

6. $4x^2 + 9x + 5 = y$

Change to Standard Form:

7. $y = -3(x + 4)^2 - 3$

For problems #8-9, change to Vertex Form:

8. $y = x^2 + 6x + 8$

9. $y = x^2 - 4x - 3$

STOP and check your answers for Unit 9. Give yourself a score, and then fix any errors.