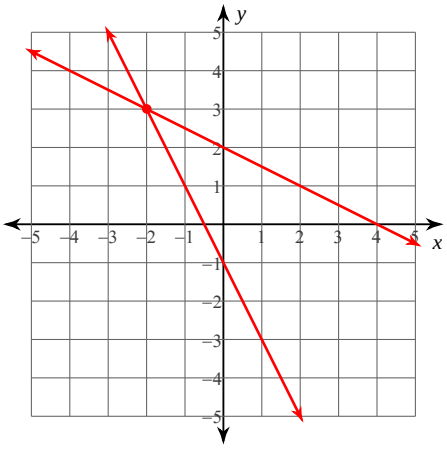
Algebra 2 Name_____

CA Unit 4

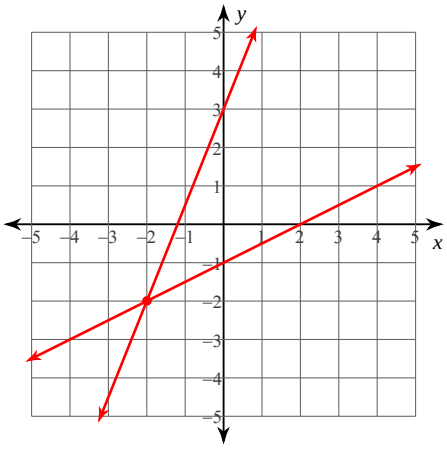
Solve each system by graphing.

1) $x + 2y = 4$
$2x + y = -1$



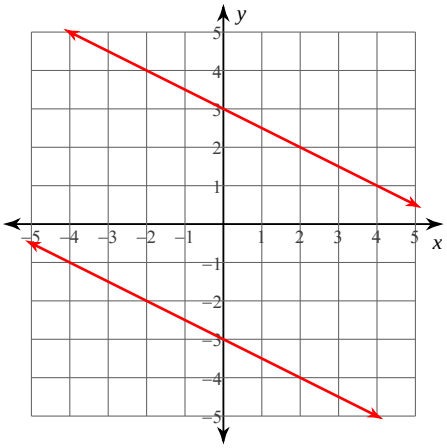
$(-2, 3)$

2) $5x - 2y = -6$
$x - 2y = 2$



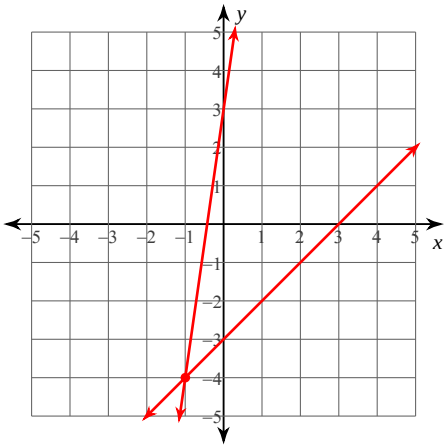
$(-2, -2)$

3) $x + 2y = 6$
$x + 2y = -6$



No solution

4) $x - y = 3$
$7x - y = -3$



$(-1, -4)$

Solve each system by substitution.

5) $x + y = 0$
$6x - 3y = -9$

$(-1, 1)$

6) $4x - 6y = 10$
$x - 3y = -2$

$(7, 3)$

Solve each system by elimination.

7) $-2x + 8y = 12$
$-2x + 8y = 12$

Infinite number of solutions

8) $4x - 4y = 0$
$-6x + 6y = 6$

No solution

Solve using any method.

9) $2x + 2y = -4$
$y - 2 = 3x$

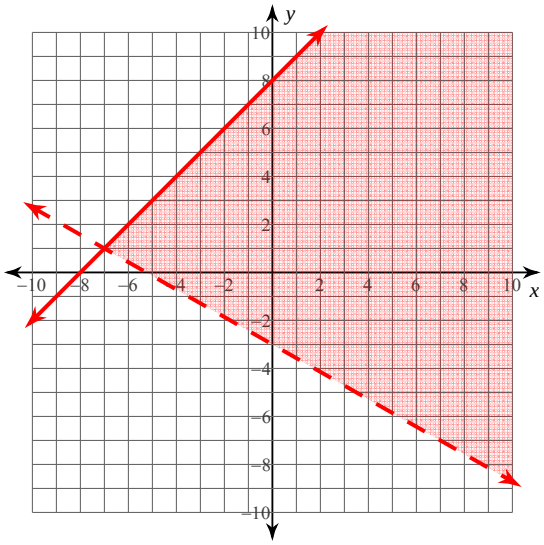
$(-1, -1)$

10) $3x + 3y = 6$
$2x + 4y = 12$

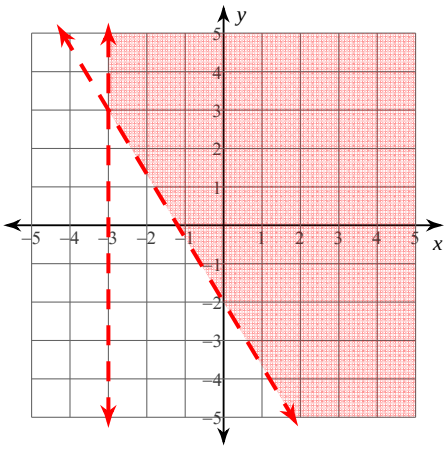
$(-2, 4)$

Sketch the solution to each system of inequalities.

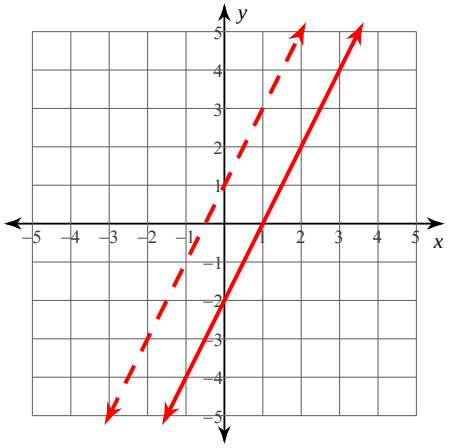
11) $x - y \geq -8$
$4x + 7y > -21$



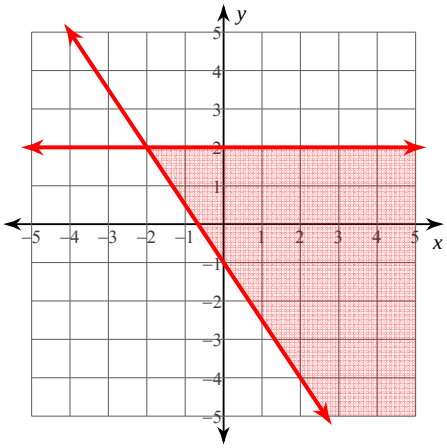
12) $x > -3$
$y > -\frac{5}{3}x - 2$



13) $2x - y < -1$
$2x - y \geq 2$



14) $y \geq -\frac{3}{2}x - 1$
$y \leq 2$



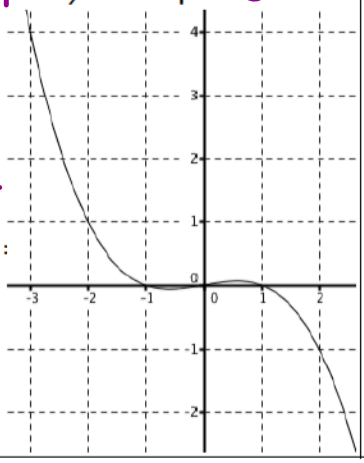
15) Is the point (0, 2) a solution to the system of inequalities in problem #14?

Yes!!! It is on the solid line!

ALGEBRA SKILLZ!

GRAPH

a. $f(2) = -1$ b. y-intercept = 0



c. $f(x) = 1$ when $x = -2$

d. x-intcepts: $-1 = x$, $0 = x$

SIMPLIFY

Simplify the radical

a. $\sqrt{150}$

$\sqrt{25}\sqrt{6}$

$5\sqrt{6}$

b. $4\sqrt{60}$

$4\sqrt{4}\sqrt{15}$

$4 \cdot 2\sqrt{15}$

$8\sqrt{15}$

SOLVE:

Solve for x. Hint: Use the LCM!!

a. $\frac{5x}{3} + \frac{x}{6} = 44$

6

$10x + x = 44$

$x = 4$

FACTOR:

b. $x^2 - 12 - 28$

-28

$-14 \times +2$

-12

$(x-14)(x+2)$

Unit 4 Application

1. Brust loves creating sculptures with candles. In fact, he is going to the store to buy new candles for his new sculpture "Candelbrot Set". Small candles (x) cost $3 and large candles (y) cost $4. He needs to buy at least 24 candles, and he cannot spend more than $200.

   $y \geq -x + 24$

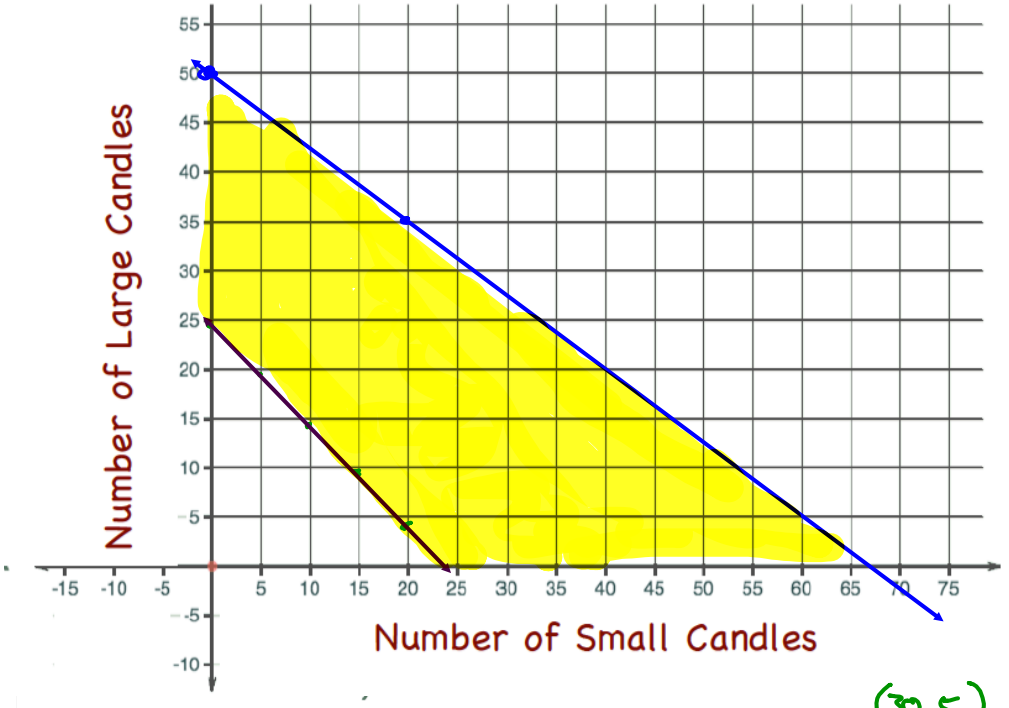
   a. Write an inequality for each of the following components:

   Brust wants to buy at least 24 candles: $x + y \geq 24$

   Brust cannot spend more than $200 $3x + 4y \leq 200$

   $y \leq -\frac{3}{4}x + 50$

   b. Graph your system of inequalities. Use a ruler.



   c. Name one point that is a solution to your system of inequalities (30, 5)

   d. Name one point that is NOT a solution to your system of inequalities (60, 10)

2. Bean and Brust each improved their yards by planting rose bushes and shrubs. They bought their supplies from the same store. Bean spent $82 on 6 rose bushes and 5 shrubs. Brust spent $116.20 on 2 rose bushes and 16 shrubs. Find the cost of one rose bush and the cost of one shrub.

$82 = 6R + 5S$

$[116.20 = 2R + 16S] \cdot -3$

$-348.60 = -6R - 48S$

$82 = 6R + 5S$

$-266.6 = -43S$

$6.2 = S$

Shrubs = $6.20

$82 = 6R + 55$

$82 = 6R + 31$

$51 = 6R$

$R = 8.5$

Roses = $8.50