

1. Solve each system of equations by using Equal Values, Substitution, or Elimination. Write your answer as an ordered pair (x,y):

a. $y = 2x + 3$
 $y = x + 9$

b. $2x + y = 13$
 $y = 2x - 3$

c. $4x - 3y = 7$
 $-3x + 3y = -5$

Problem 1

$$\begin{array}{cc} 6 & 5 \\ 2 & 15 \\ 4 & \frac{1}{3} \end{array}$$

2. Simplify each of the following exponents:

a. $x^5 \cdot x^3$

b. $(x^4)^3$

c. $\frac{x^9}{x^3}$

d. x^0

e. $\frac{6x^6}{2x^2}$

f. x^{-4}

g. $\left(\frac{2}{3}\right)^{-2}$

h. $4x^3 \cdot 5x$

i. $\frac{12x^3y^5}{4x^6y^2}$

j. $(4x^3)^3$

Problems 2 & 3

-5	-4	-1	1	1	1	3	3	8
$\frac{2}{3}$	$\frac{2}{3}$	$-\frac{1}{3}$	$-\frac{3}{2}$	$\frac{9}{4}$	$\frac{1}{x^4}$	$\frac{3y^3}{x^3}$		
$64x^9$	$20x^4$	$3x^4$	x^6	x^8	x^{12}			

3. Fill out the following information in the table below:

	$y = 3x - 5$	$y = x - 4$	$y = \frac{2}{3}x + 8$
Name the slope of the line			
Name the y-intercept of the line			
Name the slope of a line parallel to this line			
Name the slope of a line perpendicular to this line			

4. Solve each inequality and graph your solution on a number line:

a. $5x - 3 \geq 12$

b. $4x - 7 < 7x + 11$

c. $7 > -2x + 5$

d. $-2(3x - 6) \leq 5x + 1$

e. $|7x - 2| < -5$

f. $|x + 7| \geq 2$

Problem 4

$$\begin{array}{l} x > -1 \\ x \geq 1 \\ x \geq 3 \\ x > -6 \\ x \leq -9 \\ x \geq -5 \\ \text{No Solution} \end{array}$$

5. Solve each of the following absolute value equations:

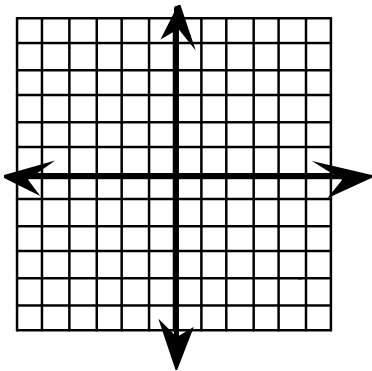
a) $|x+3|=7$

b) $|3x-2|=13$

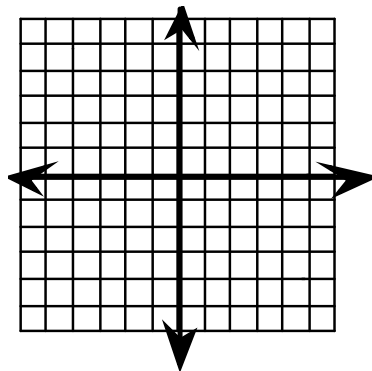
c) $|2x+6|-2=10$

6. Graph each of the following (Don't forget to Shade):

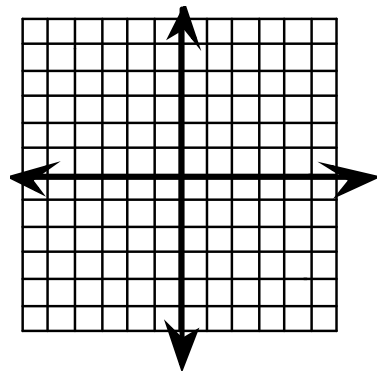
a) $y \leq 2x+1$



b) $y < \frac{1}{3}x + 2$

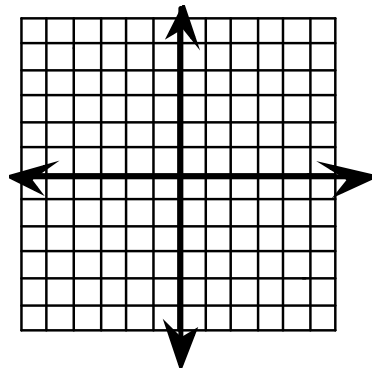


c) $y > -2x+4$

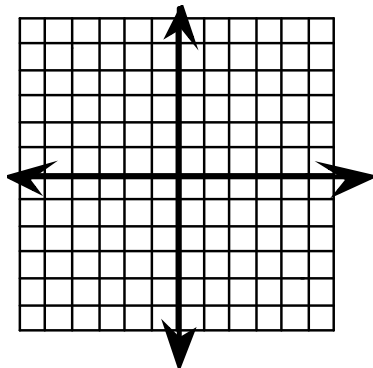


7. Graph each system of inequalities and shade in the common area:

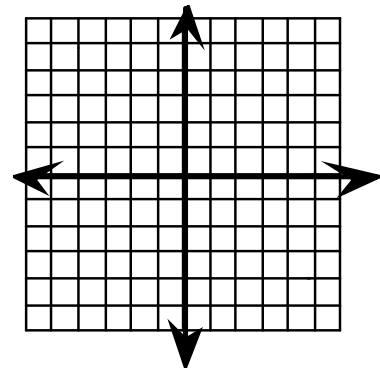
a) $y < 2x-5$
 $y \geq -3x+1$



b) $y > -\frac{2}{3}x$
 $y < -2x+5$



c) $2x+y \geq 6$
 $3y+2x < 12$



8. If the points A(2, 5) and B(6, 1) are plotted on a graph, find the following:

a) The slope of $\overline{AB}$

b) Find the length of $\overline{AB}$

c) Find the midpoint of $\overline{AB}$

Problems 5 & 8

(4,3) -10 -9 -1 3 4 5 5.66 $-\frac{11}{3}$