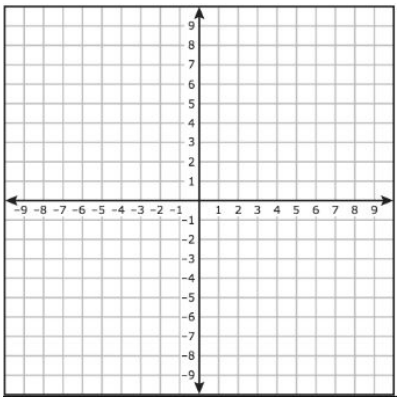
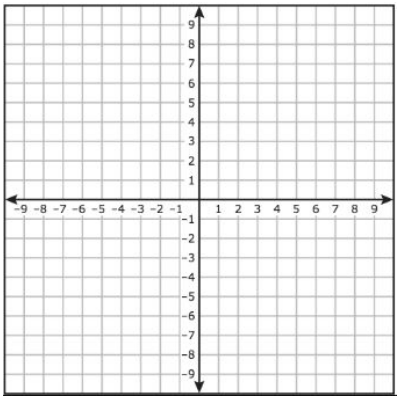
Algebra 2 Chapter 3 Pre-Test

1.) (5 pts each, 10 pts total) Solve each of the following systems of equations by graphing.

a) $3x + 4y = 12$
$-x + 2y = 6$



b) $2x + 5y = 10$
$y = 2x - 2$



2.) (5 pts each, 10 pts total) Solve each of the following systems of equations through substitution.

a) $4x + 2y = 20$
$y = 2x - 2$

b) $5x - 3y = 7$
$6x + y = 13$

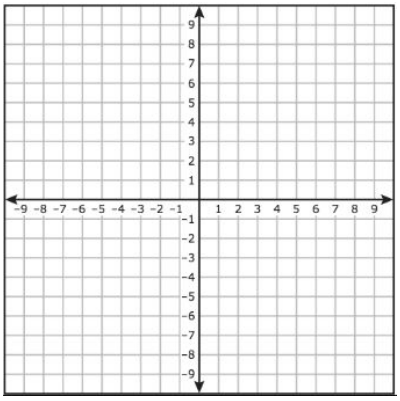
3.) (5 pts each, 10 pts total) Solve each of the following systems of equations through elimination.

a) $2x + 7y = -8$
$x - 4y = 11$

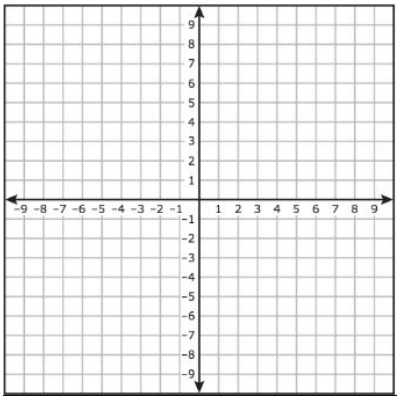
b) $4x - 5y = 31$
$2x + 3y = -1$

4.) (5 pts each, 10 pts total) Solve each of the following systems of equations through any method.

a) $3x + 4y = -21$
$-4x - 4y = 16$

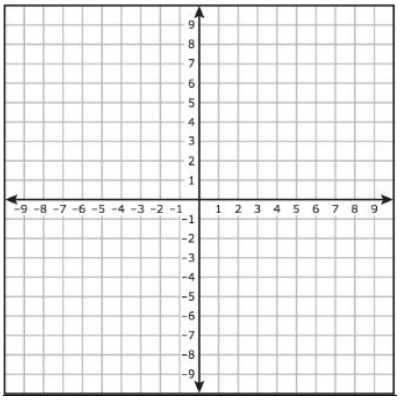


b) $8x + 4y = 16$
$y = -4x + 5$



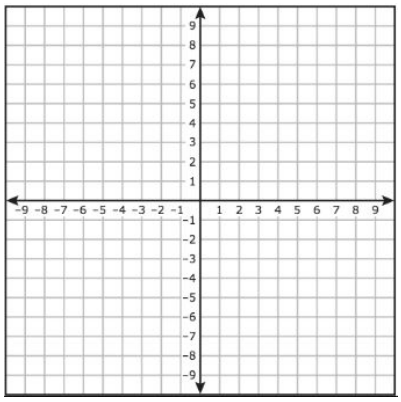
5.) (5 pts each, 15 pts total) Solve each of the following systems of inequalities by graphing.

a) $x + y > 2$
$x - y \leq 4$



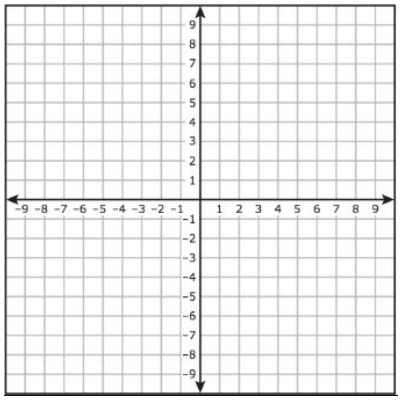
b) $2x + y > 2$

$x - y \geq 3$



c) $y > 3x + 2$

$y \leq -2x + 1$

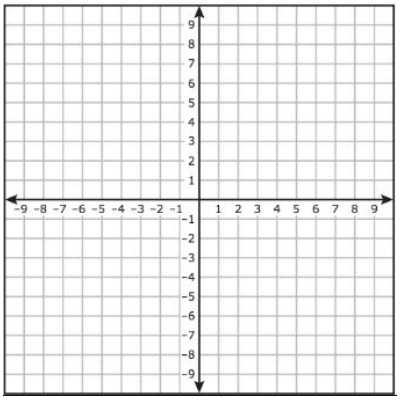


6.) (10 pts each, 20 pts total) Graph each system of constraints. Name all vertices. Then find the values of x and y that maximize or minimize the objective function.

a) $x + y \leq 6$
$2x + y \leq 10$
$x \geq 0$
$y \geq 0$

Vertices:

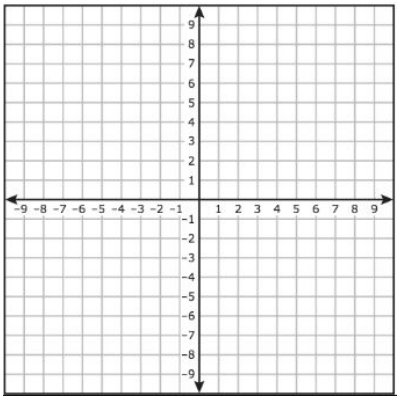
Find the maximum for $P = 4x + y$



b) $4x + 2y \leq 4$
$2x + 4y \leq 4$
$x \geq 0$
$y \geq 0$

Vertices:

Find the minimum for $P = 3x + y$

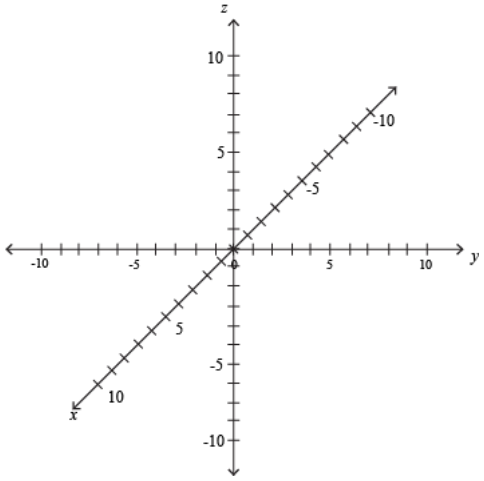


7.) (various pts each, 25 pts total) Solve each system using elimination.

a) (10 pts) Solve.

$$2x - 3y + z = -3$$
$$x - 5y + 7z = -11$$
$$-10x + 4y - 6z = 28$$

b) (2.5 pts) Graph the above solution.



c) (10 pts) Solve.

$$14x - 3y + 5z = -15$$
$$3x + 2y - 6z = 10$$
$$7x - y + 4z = -5$$

d) (2.5 pts) Graph the above solution.