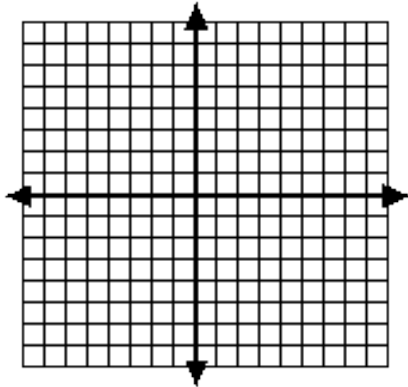
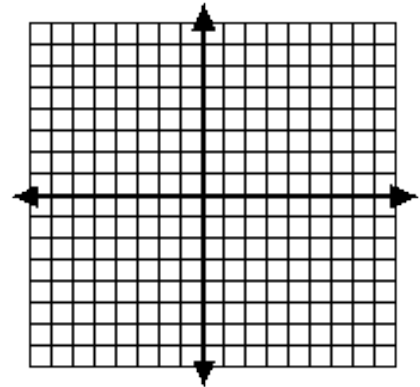


**In Class Examples:** Graph each system of inequalities. Name the coordinates of the vertices of the feasible region. Find the maximum and minimum of the given function for this region.

1.  
 $y \geq 2x - 4$   
 $y \geq -2x - 4$   
 $y \leq 2$   
 $f(x,y) = -2x + y$



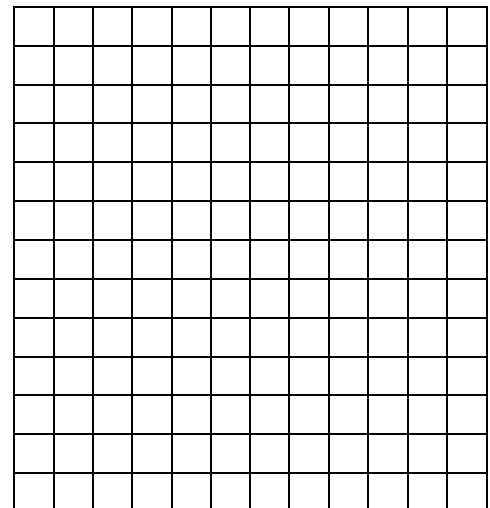
2.  
 $x \geq 0$   
 $y \geq 0$   
 $y \leq 6$   
 $y \leq -3x + 15$   
 $f(x,y) = 3x + y$



4. Bob builds tool sheds. He uses 10 sheets of dry wall and 15 studs for a small shed and 15 sheets of dry wall and 45 studs for a large shed. He has available 60 sheets of dry wall and 135 studs.

- a. Let  $s$  represent the number of small sheds and  $l$  the number of large sheds. Write a system of 4 inequalities.

- b. If Bob makes \$390 profit on a small shed and \$520 on a large shed, how many of each type of building should Bob build to maximize his profit?



**Homework: Graph each system of inequalities. Name the coordinates of the vertices of the feasible region. Find the maximum and minimum of the given function for this region.**

**1.**

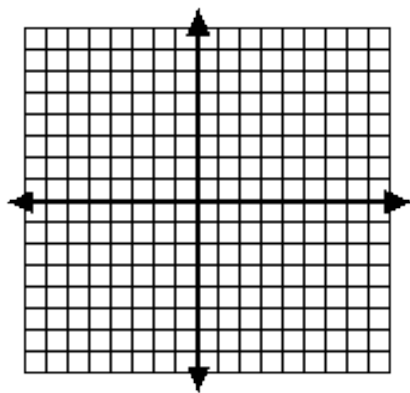
$$x \geq 2$$

$$x \leq 5$$

$$y \geq 1$$

$$y \leq 4$$

$$f(x,y) = x + y$$



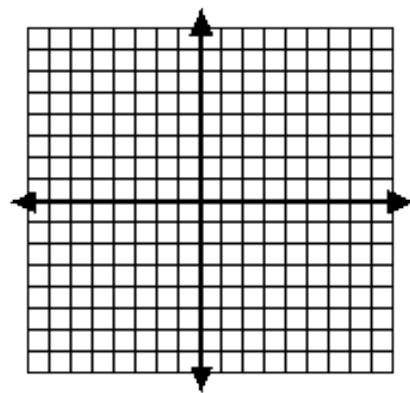
**2.**

$$x \geq 1$$

$$y \leq 6$$

$$y \geq x - 2$$

$$f(x,y) = x - y$$



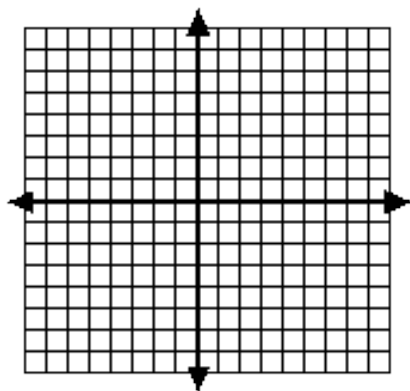
**3.**

$$x \geq 0$$

$$y \geq 0$$

$$y \leq 7 - x$$

$$f(x,y) = 3x + y$$

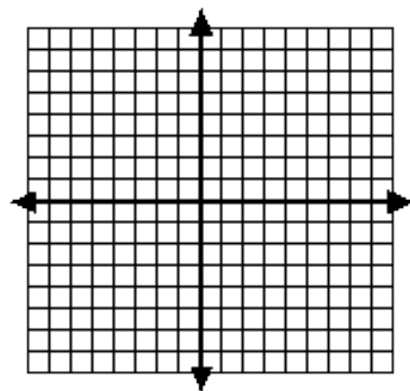


**4.**

$$x \geq -1$$

$$y \leq -x + 6$$

$$f(x,y) = x + 2y$$



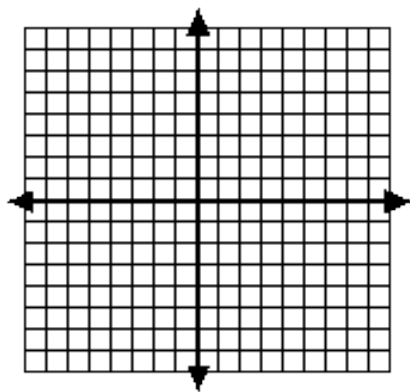
**5.**

$$y \leq 2x$$

$$y \geq -x + 6$$

$$y \leq 6$$

$$f(x,y) = 4x + 3y$$



**6.**

$$y \geq -x - 2$$

$$y \geq 3x + 2$$

$$y \leq x + 4$$

$$f(x,y) = -3x + 5y$$

