

## Unit One: Linear Inequalities in Two Variables

Go to [http://www.exploremath.com/activities/Activity\\_page.cfm?ActivityID=29](http://www.exploremath.com/activities/Activity_page.cfm?ActivityID=29) and do the following exercises to make sure that you understand the materials: **(Make sure that you use the web resource to graph the solution then copy to Words to print out your work)**

1. Graph the solution of the linear inequality. Give the coordinates of any five points that are solutions for the inequality: Verify your answers.
  - a)  $x \geq 0$
  - b)  $x \geq 3$
  - c)  $y \geq 4$
  - d)  $y \leq 4$
  - e)  $x + y \geq 2$
  - f)  $x - y \leq 1$
  - g)  $3x + 4y \leq -12$
  - h)  $2x + 3y \geq 6$
  
2. Suppose a patient is not allowed to have more than 330 mg of cholesterol from a diet of eggs and meat. Each egg provides 165 mg of cholesterol and each ounce of meat provides 110 mg of cholesterol. Thus  $165x + 110y \leq 330$ , where  $x$  is the number of eggs and  $y$  the number of ounces of meat. Graph the inequality in the first quadrant. Give the coordinates of any two points in the solution set. Explain what each set of coordinates means in terms of variables in the problem.
  
3. Many elevators have a capacity of 200 pounds (lbs). If a child averages 50 lbs and an adult 150 lbs. Write an inequality that describes when  $x$  children and  $y$  adults will cause the elevator to be overloaded. Graph the inequality. Give the coordinates of any two points in the solution set. Explain what each set of coordinates means.