Name: _____ Date: _____

An _____ problem is a problem in which we find the greatest or least value of functions.

The method used to solve such problems is called _____ and consists of two parts:

1.

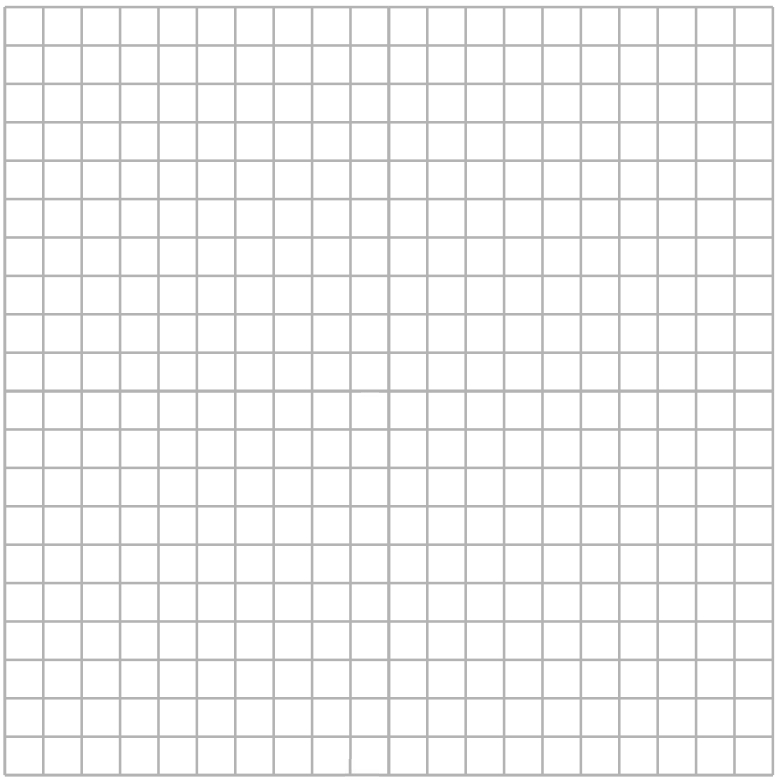
2.

Example A company makes motorcycles and bicycles. A restricted work area limits the number of vehicles that can be made in one day to: no more than 10 motorcycles can be made, no more than 15 bicycles can be made, and no more than 20 vehicles of both kinds can be made. If the profit is $25 for a motorcycle and $50 for a bicycle, what should the daily rate of production of both vehicles be to maximize the profits?

Step 1 Identify the quantity that must be optimized.

Step 2 Define the variables that affect the quantity to be optimized and state any restrictions.

Step 3 Write a system of linear inequalities to describe all the constraints of the problem and graph the feasible solution. Graph the feasible solution.



Step 4 Write the objective function.