

## Maximize and Minimize Problems

1. Define the variables.
2. Is it a maximize or minimize problem? What are you maximizing? Find an equation for it.
3. Look for totals. For each total, there is an inequality. Will it be "les than or equal to" or "greater than or equal to"? Find an expression for each total.
4. Don't forget the invisible inequalities. Usually  $x$  and  $y$  must each be greater than or equal to zero.
5. Graph the inequalities. Label the lines and find the shading.
6. Find the vertices.
7. Plug each of the vertices into the objective function (the function you want to maximize or minimize).
8. Answer the question.