

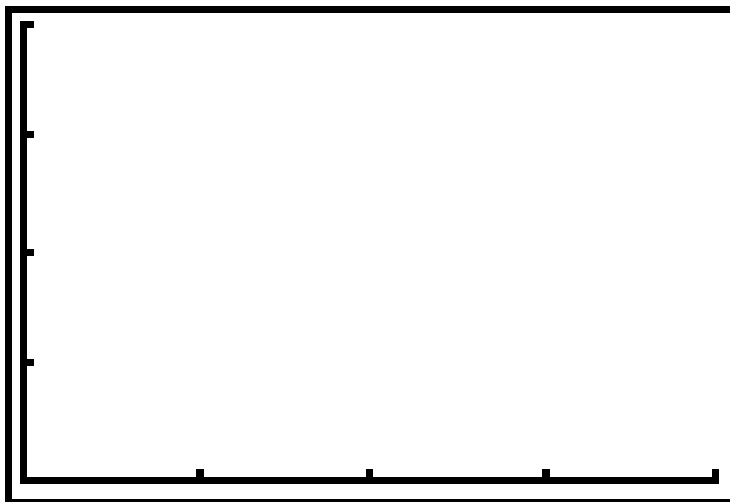
Linear Programming: Learning the Ropes #2

Name _____

Farming: The Adam's Family needs to plant 210 acres on their farm. From crop x they will earn \$400 an acre and from crop y they will make \$350 an acre. They must plant at least 40 acres of crop x and 50 acres of crop y. Soil conditions this year do not permit them to plant more than 80 acres of crop x. State law will allow the acres for crop y to be no more than twice that of crop x. Help the Adam's Family make some money!

1. There are five inequalities (restraints), can you find these?

2. Graph the inequalities (constraints) on the grid (you may have to adjust grid marking values).



3. Find the vertices of the enclosed figure (feasible region): _____

4. Find $f(x, y)$ so that the company could find the farm's profit: _____

5. Use your answers for #3 and #4 to list the possible profit at the vertices: _____

6. What is the maximum that the farm can make in profit this year? _____

7. When does this occur? _____

8. What is the minimum that the farm can make (assuming no disasters)? _____

9. When does this occur? _____