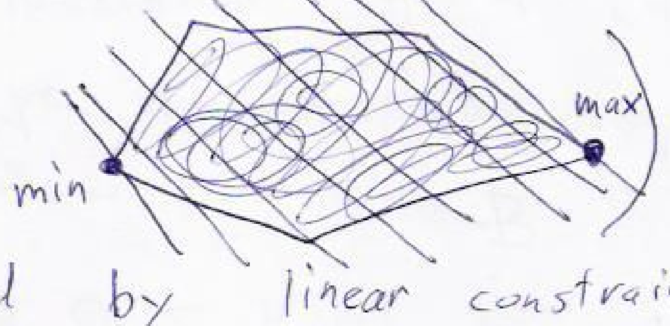
(5-3) "Linear programming" geometrically

Suppose you have a feasible set that is bounded and

(like 

)

determined by linear constraints, and you have an "objective function" of the form $Ax+By$ that you're trying to optimize. Then there is a minimum at some corner & a maximum at some corner.

Suppose you have an unbounded feasible set determined by linear constraints that include the "nonnegative constraints" $x, y \geq 0$.

(Like: 

If the objective function is of the form $Ax+By$ and $A>0$ and $B>0$, then $Ax+By$ has a minimum at a corner but no maximum.

2 other unbounded feasible sets

For examples:

x = \$ invested in mutual funds

y = \$ invested in CDs

Objective function: $(9\%)x + (5\%)y$

maximize it

$$\begin{pmatrix} 5-3 \\ \#37 \end{pmatrix}$$

$x, y \geq 0$

$x + y \leq 60{,}000$

$x \geq 10{,}000$

$y \geq 2x$

$\left.\begin{array}{l} \text{HW (5-3) \#38} \\ \text{HW (5-3) \#33} \\ \text{HW (5-3) \#40} \\ \text{HW (5-3) \#41} \end{array}\right\}$ applications

$\text{HW (5-3) \#26}\}$ straight math