BE-Alg 2 WEDNESDAY 9-21-11

ACT KMJ INEQ9

① THE EQUATIONS BELOW ARE LINEAR EQUATIONS of A system where a, b, AND c ARE positive integers.

$$ay + bx = c$$
$$ay - bx = c$$

WHICH OF THE following describes the graph of At least 1 such system of EQUATIONS in the STANDARD (x, y) COORDINATE PLANE?

I. 2 parallel lines
II. 2 intersecting lines
III. A single line

(A) I ONLY
(B) II only
(C) III only
(D) I OR II only
(E) I, II, OR III

ANS. $ay + bx = c$ $\quad$ $ay - bx = c$

$ay = -bx + c$ $\quad$ $ay = bx + c$

$y = -\frac{b}{a}x + \frac{c}{a}$ (DIFF SLOPE, LINES CROSS) $y = \frac{b}{a}x + \frac{c}{a}$

Ch. 3-4 Linear Programming

A system of linear inequalities is used to model many real life situations in business or engineering.

Each inequality is called a

Constraint - an inequality that is part of a system of inequalities.

Other definitions to know:

feasible region - the intersection of the graphs of a system of inequalities.

bounded region - when the feasible region is a polygon.
(That is, no side goes to ∞.)

$f(x,y)$ - a function with 2 variables
(Read: f of x and y)

Key idea:

Vertex Theorem

The MAXIMUM OR MINIMUM of a system of linear inequalities ALWAYS occurs AT A VERTEX of the feasible region.

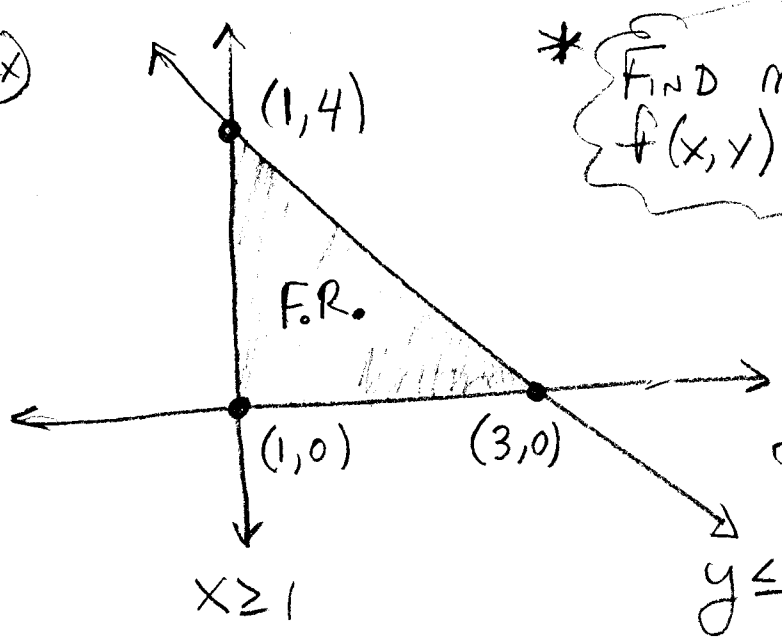
OR

The *related $f(x,y)$ function has a MAX or MIN AT A VERTEX of the feasible region.

*$f(x,y)$ is the function the inequalities apply to.

(EX) Ex 1 Pg 129

* FIND MAX, MIN OF $f(x,y) = 3x + y$



(x,y)	f(x,y)
(1,0)	3 MIN
(3,0)	9 MAX
(1,4)	7

HW: Read Ch. 3-4 (before Monday)

Practice:

Graphing linear inequalities and finding the coordinates of the vertices:

Pg 126 # 24-27