Intro lesson #9

Inequalities = constraints

feasible region = intersection of graphs

# Lesson 3-4 Linear Programming

Graph each system of inequality. Name the coordinates of the vertices of the feasible region. Find the maximum and minimum values of the given function for this region. → max or min will always occur at one of the vertices

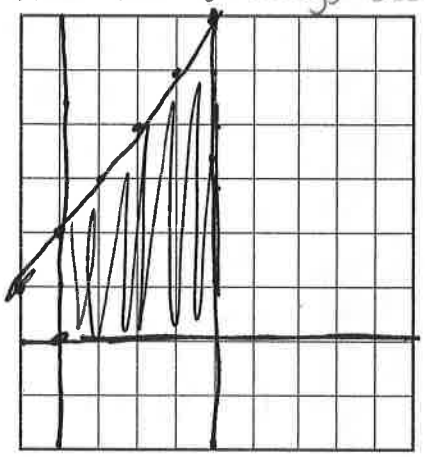
$y \geq 2$

$1 \leq x \leq 5$

$y \leq x + 3$

$f(x, y) = 3x - 2y$

(1, 2) = -1
(1, 4) = -5
(5, 2) = 11
(5, 8) = -1




Min = -5
max = 11

Graph each system of inequality. Name the coordinates of the vertices of the feasible region. Find the maximum and minimum values of the given function for this region.

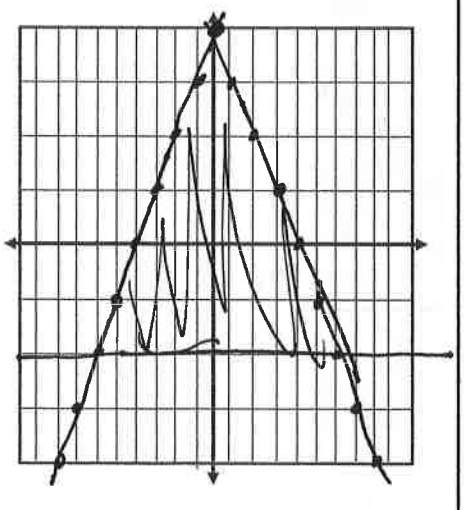
$x - y \geq -4$ $y \leq x+4$

$x + y \leq 4$ $y \leq -x+4$

$y \geq -2$

$f(x, y) = 2x + 3y$

(0, 4) = 12
(6, -2) = 6
(-6, -2) = -18



Min = -18
Max = 12

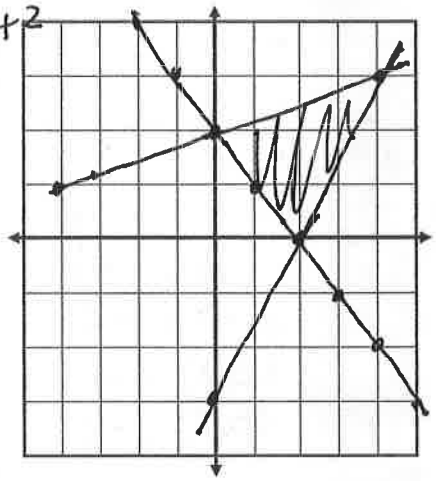
Graph each system of inequality. Name the coordinates of the vertices of the feasible region. Find the maximum and minimum values of the given function for this region.

$x + y \geq 2$ $y \geq -x + 2$

$4y \leq x + 8$ $y \leq \frac{1}{4}x + 2$

$2y \geq 3x - 6$ $y \geq \frac{3}{2}x - 3$

$f(x, y) = 3y + x$



$(0,2) = 6$

$(2,0) = 2$

$(4,3) = 13$

Max = 13

Min = 2

Graph each system of inequality. Name the coordinates of the vertices of the feasible region. Find the maximum and minimum values of the given function for this region.

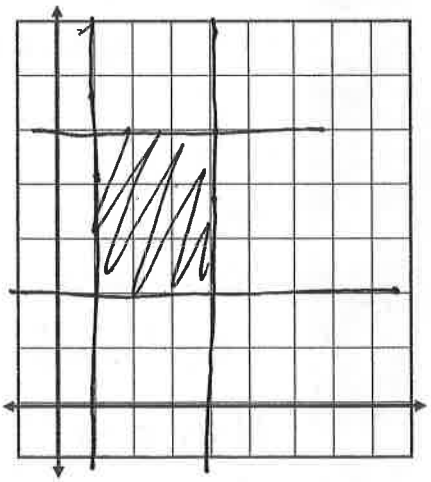
$x \geq 1$

$y \geq 2$

$x \leq 4$

$y \leq 5$

$f(x, y) = 2x + y$



$(1,2) = 4$

$(1,5) = 7$

$(4,2) = 10$

$(4,5) = 13$

Max = 13

Min = 4