Name: _____ Date: _____

MA 162

Week 11 Recitation Worksheet (Thursday)

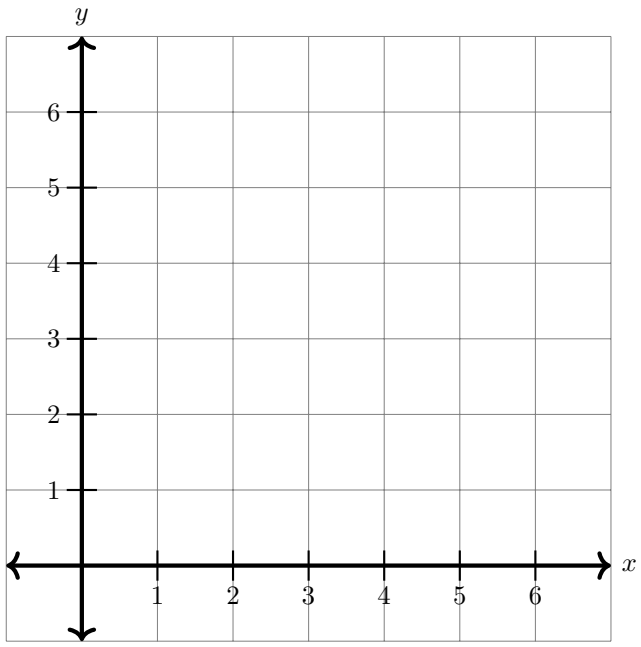
You must show all work to receive full credit.

1*. Solve the following LP problem using the simplex method.

$$\begin{array}{ll} \text{Maximize} & P = 4x + 6y \\ \text{subject to} & x + 2y \leq 16 \\ & 3x + 2y \leq 32 \\ & 2x + 2y \leq 23 \\ & x \geq 0, y \geq 0 \end{array}$$

2. Solve the following LP problem by graphing the feasible region.

$$\begin{aligned} \text{Maximize} \quad & P = 3x + 4y \\ \text{subject to} \quad & x + y \leq 4 \\ & x + 2y \leq 6 \\ & x \geq 0, y \geq 0 \end{aligned}$$



3. Solve the LP problem from #2 using the simplex method. [Compare your result with #2. Note that each time you pivot, you move from one corner point of the feasible region to another, increasing the value of P until you reach the maximum value.]

$$\begin{array}{ll} \text{Maximize} & P = 3x + 4y \\ \text{subject to} & x + y \leq 4 \\ & x + 2y \leq 6 \\ & x \geq 0, y \geq 0 \end{array}$$

4. Solve the following LP problem using the simplex method.

$$\begin{array}{ll} \text{Maximize} & P = 6w + y + z \\ \text{subject to} & w + x + y \leq 2 \\ & w - 2x + z \leq 1 \\ & w \geq 0, x \geq 0, y \geq 0, z \geq 0 \end{array}$$