

Math 111

Take-home Quiz 7

Due Monday 2 May 2005

Crawford

Name: _____

You may work with others on this quiz, but you may not get help from the tutors. Books, notes, and calculators are allowed. *Show all your work and clearly indicate your answers.* Good Luck!

Solve the following inequalities for x , then graph the solution on the number line.

1. (3 pts) $|2x + 5| \geq 4$

2. (3 pts) $|1 - x| < 3$

3. (3 pts) $2x^2 + 2x > x^2 + 15$

4. (3 pts) $(x - 1)^2(3 - x) < 0$

5. (4 pts) Graph the solution region for the following inequalities.

$$\begin{cases} 3x - 5y \leq -8 \\ 4x + 3y \leq 12 \\ x \geq 0 \\ y \geq 0 \end{cases}$$

6. (4 pts) Given the linear programming problem: Maximize $f = 2x + 3y$ subject to $\begin{cases} 2x + y \geq 8 \\ x + 3y \leq 9 \\ x \geq 0, y \geq 0 \end{cases}$

- (a). Shade the feasible region
- (b). Find the corners
- (c). Maximize the function as directed.