

Assignment:

Page 209 # 2 – 7, 9 – 14

#2 and #5 go together

#3 and #6 go together

#4 and #7 go together

#9 and #12 go together

#10 and #13 go together

#11 and #14 go together

Graph each feasible region.

$$2. \begin{cases} x \geq 0 \\ y \geq 0 \\ y \leq 3x + 3 \\ y \leq -x + 7 \end{cases}$$

$$3. \begin{cases} x \geq 0 \\ y \geq -1 \\ y \leq x + 1 \\ y \leq -\frac{1}{4}x + 6 \end{cases}$$

$$4. \begin{cases} x \geq -2 \\ y \leq 1 \\ y \geq 0.5x - 2 \\ y \leq -2x + 3 \end{cases}$$

Maximize or minimize each objective function.

5. Maximize $P = 10x + 16y$ for the constraints from Exercise 2.

6. Minimize $P = 3x + 5y$ for the constraints from Exercise 3.

7. Maximize $P = 2.4x + 1.5y$ for the constraints from Exercise 4.

Graph each feasible region.

$$9. \begin{cases} x \geq 0 \\ y \geq 0 \\ y \geq 4x - 4 \\ y \leq x + 5 \end{cases}$$

$$10. \begin{cases} x \leq 0 \\ y \geq 0 \\ y \leq 9 \\ y \geq -2x - 7 \end{cases}$$

$$11. \begin{cases} x \geq 0 \\ x \leq 5 \\ y \geq \frac{1}{5}x - 3 \\ y \leq -x + 4 \end{cases}$$

Maximize or minimize each objective function.

12. Maximize $P = -21x + 11y$ for the constraints from Exercise 9.

13. Minimize $P = -2x - 4y$ for the constraints from Exercise 10.

14. Maximize $P = x + 3y$ for the constraints from Exercise 11.