

Section 7.5 Linear Programming

Objective: In this lesson you learned how to solve linear programming problems.

Course Number

Instructor

Date

Important Vocabulary

Define each term or concept.

Optimization

Linear programming

Objective function

Constraints

Feasible solutions

I. Linear Programming: A Graphical Approach

(Pages 601–604)

If a linear programming problem has a solution, it must occur . . .

If there is more than one solution to a linear programming problem, at least one of them . . .

In either case, the value of the objective function is _____.

List the steps for solving a linear programming problem:

What you should learn

How to solve linear programming problems

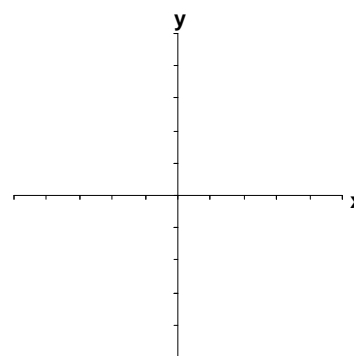
Example 1: The vertices of the region of feasible solutions for a linear programming problem are as follows:

- (0, 0)
- (5, 0)
- (10, 3)
- (7, 6)
- (0, 4)

If the objective function is $z = 8x + 3y$, find the maximum value and where it occurs.

Example 2: Find the minimum value of $z = 4x + 6y$ subject to the following constraints.

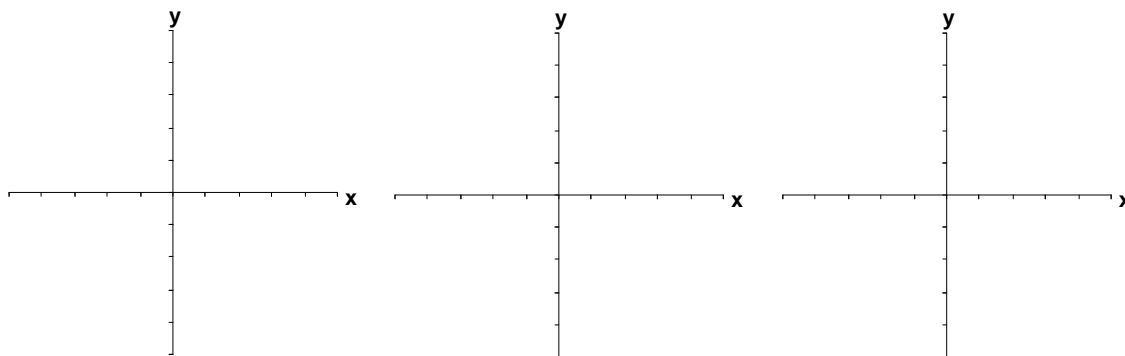
$$\left. \begin{array}{l} x \geq 0 \\ y \geq 0 \\ x + y \geq 2 \\ y \leq 4 \\ x \leq 5 \end{array} \right\}$$



II. Applications of Linear Programming (Pages 605–606)

Describe a real-life problem that can be solved using linear programming.

What you should learn
 How to use linear programming to model and solve real-life problems



Homework Assignment

Page(s)

Exercises