

## **Linear Programming Problem #1**

A city wants to plant trees to absorb carbon dioxide. It has \$2100 to plant spruce and maple trees. The city has 45,000 ft<sup>2</sup> it can use to plant the trees. A spruce tree costs \$30 and requires 600 ft<sup>2</sup>. The maple costs \$40 and requires 900 ft<sup>2</sup>. The spruce absorbs 650 lb of carbon dioxide per year while the maple absorbs 300 lb per year. How many of each type of tree should the city purchase to maximize carbon dioxide absorption?

## **Linear Programming Problem #2**

Baking a tray of corn muffins takes 4 cups of milk and 3 cups of wheat flour. Baking a tray of bran muffins takes 2 cups of milk and 3 cups of wheat flour. A baker has 16 cups of milk and 15 cups of wheat flour. He can make \$3 profit per tray of corn muffins and \$2 profit per tray of bran muffins. How many trays of each type of muffins should the baker make to maximize his profit?

## **Linear Programming Problem #3**

You are screen printing T-shirts and sweatshirts to sell at a craft show. It takes 10 minutes of work to screen print a T-shirt and the supplies cost \$4. The sweatshirts require 30 minutes of work and the supplies cost \$20. You have at most 20 hours to work on the shirts. You want to spend no more than \$600 on supplies and you need to have at least 50 items to sell. You can earn \$6 profit on each T-shirt and \$20 profit on each sweatshirt. How many T-shirts and how many sweatshirts should you make to maximize your profit?

## **Linear Programming Problem #4**

A farmer wants to plant corn and soybeans on 150 acres of land. The farmer wants to plant between 40 and 120 acres of corn and no more than 100 acres of soybeans. If corn brings \$358 per acre and soybeans bring \$237 per acre, then how many acres of each should be planted to earn a maximum income?

## **Linear Programming Problem #5**

Bob builds tool sheds. He used 10 sheets of drywall and 15 studs for a small shed and 15 sheets of drywall and 45 studs for a large shed. He has available 60 sheets of dry wall and 135 studs. If Bob makes \$360 profit on a small shed and \$550 profit on a large shed, how many of each type of building should Bob build to maximize his profit?