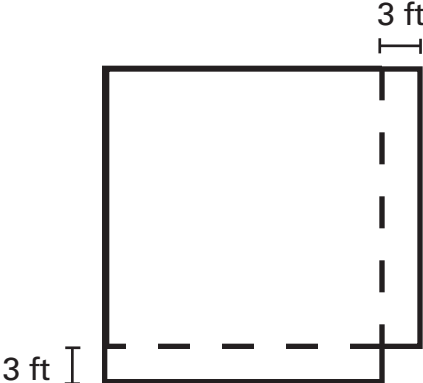# Gardening problems

1. Jamal is helping his grandfather with a garden. Last year the garden plot was in the shape of a square. But this year they need to change the shape of the garden by adding 3 feet on the east side and taking away 3 feet from the south side. Jamal's grandfather wonders if the garden will be the same size, larger, or smaller than last year's garden. If it is not the same, how much larger or smaller will it be?

2. Jamal and his grandfather also want to build a box to hold compost for their garden. They have a sheet of heavy wire mesh that is 8 feet by 12 feet. They want to make an open-top container that wil hold the maximum amount of compost by cuting out the same size square from each corner of the wire mesh and folding each side up. The squares should be cut out in 6-inch increments. What will the dimensions of the container be? How much compost will it hold if the compost is level with the top of the box?

3. After their garden is planted, Jamal and his grandfather decide that they need to build a wooden container with a top that will hold two cylindrical containers in which they keep fertilizer and lime. Each of the two cylindrical containers is 3 feet tall and has a circumference of 66 inches. What are the dimensions of the smallest wooden box they can build that will hold the two containers if they leave 1 inch of space on the sides and top and 4 inches between the two containers?

   If they want to paint the outside of the wooden container using two coats of paint, how much paint should they buy if 1 gallon will cover 400 square feet?
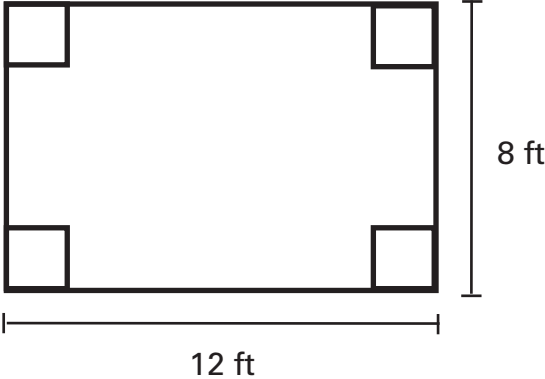
Author: Pat Sickles, Durham Public Schools, Durham, NC

Gardening problems — illustrations

(These illustrations may be given to the students at the teacher's discretion. Note that they are not drawn to scale!)

Problem 1

3 ft

3 ft

Problem 2

8 ft

12 ft

Problem 3