# Changing Dimensions: Area
## Problems from Video

Rick, from Rathmell Construction, is preparing a cost estimate for replacing a cement patio. The homeowner told him that he wanted to double the length and the width of the patio. Before Rick can complete his cost estimate he needs to know how changing dimensions affects area. The original patio was 10 feet by 12 feet and had an area of 120 square feet. The homeowner wants to double the length and width so the new patio will be 20 feet by 24 feet, making the area 480 square feet.

**Problem 1:** The length and width of the patio were doubled but the new area is not doubled. It is four times as big. How can that be?

**Problem 2:** What happens to the area of a rectangular region when the base and height are tripled? Quadrupled? Describe what happens to the area when the base and height are made n times as large, where n represents any number.