



**February 2000**

**Activity 1: How Many Shingles?**

The surface area of a roof is measured in squares of shingles. Each square covers 100 square feet. However, when you buy them, shingles are usually priced per bundle. In most cases, 3 bundles = 1 square.

To calculate the number of bundles needed for a roof, measure the roof's square footage (length x width). Divide that number by 100 to get the number of squares needed. Use the equivalency above (3 bundles per square) to determine the number of bundles needed to shingle the roof.

1. You are planning to roof a house that has exterior measurements of 60 feet by 24 feet. The house has a gable roof. Use the information provided in Figures 1 and 2 to determine the number of bundles of shingles you must order to completely re-roof this house.

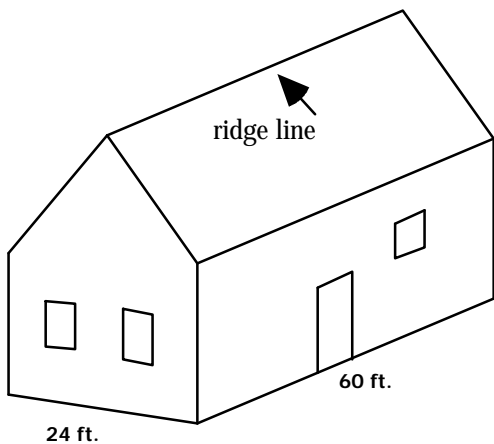


Figure 1. The house with dimensions labeled.

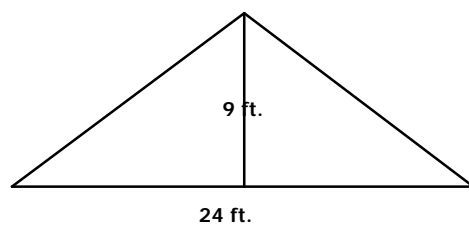


Figure 2. The end gable of the roof with dimensions labeled.

2. You are again planning to roof a house that has exterior measurements of 60 feet by 24 feet. This house has what is called a hip roof.

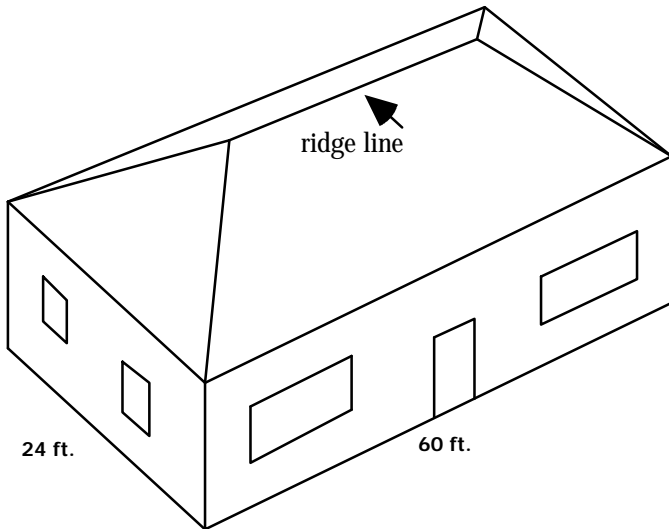


Figure 3. House with hip roof and given dimensions.

- a. Describe the geometric figures used to determine the areas of the two roof styles.
- b. Explain how you must change your method of calculating the area of the roof for the hip roof style.
- c. The ridge line of the hip roof is 9 feet above the first floor, and its length is  $\frac{2}{3}$  the length of the house. Determine the number of bundles necessary to re-roof this house.