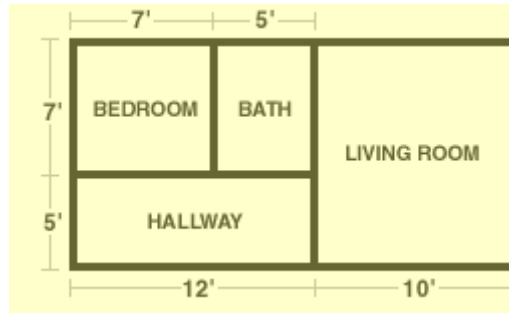


Figuring Area: Squares and Rectangles/Math Computation

Imagine you're planning on buying new carpet for your home. You're going to put down carpeting in the living room, bedroom, and hallway, but not in the bathroom. You try to guess how much carpet you might need to cover these rooms, but you're better off figuring out exactly what you need. To determine how much carpet you'll need, you'll use this simple formula:

$$A = L \times W$$

Or, in other words, **"area equals length times width."** This **formula is used to determine the area of a rectangle or square.** In the floor plan below, all of the floor space (as well as the walls and ceilings) is made up of squares or rectangles, so this formula will work for figuring the area you need to carpet.



Now, start by figuring the total area of the floor plan. When you're finished, you can deduct the area of the bathroom, since you don't want to carpet that room. To figure out the **total area of the floor plan, you'll need to know that total length and width.** The total length of the floor plan above is 12 feet plus 10 feet, or 22 feet. The total width is 7 feet plus 5 feet, or 12 feet. Plug these numbers into your equation to get the total area of the floor plan:

$$A = 22 \text{ feet} \times 12 \text{ feet} = 264 \text{ square feet}$$

The total area of your floor plan is 264 square feet. Now you need to figure out the area of the bathroom so you can deduct it from the total area. The bathroom is 7 feet long and 5 feet wide, so it has an area of 35 square feet. Deducting the area of the bathroom from the total area (264 minus 35) leaves you with 229 square feet to carpet.

Using the above floor plan and measurements (and scratch paper), answer the following questions:

1. If you want to carpet the bedroom and hallway in the same color, how much carpet of that color would you need? _____
2. If you want to carpet the living room and hallway in the same color (not that of the bedroom/hallway) how much carpet of that color would need?

3. If you want to carpet the living room and bedroom in a particular color, how much carpet of that color would you need? _____

Adapted from:
[Annenbeag/CPB Learner.org](http://www.4teachers.com). 1997-2004. "Figuring Area: Squares and Rectangles." 12 July 2004 <<http://www.4teachers.com>>.