

Real-Life Application: When Will I Ever Use This?

For use with pages 473–479

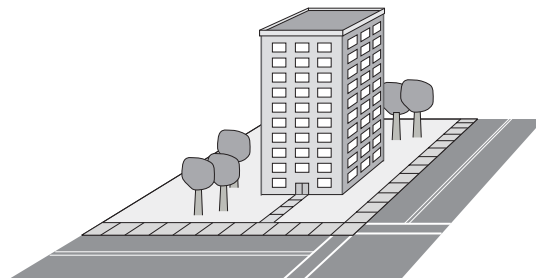
Architecture

An architect uses many methods to help visualize the building structure. This includes the placement of doors, windows, and even landscaping. A plan starts at the drafting board with a two-dimensional drawing. From there, an architect can move into three-dimensional models. These models are true to scale, including landscaping and surrounding buildings. These models are used for sales, presentations and displays.

In today's technology, an architect uses CAD, virtual reality, and animation to display a building design. Using computer software, an architect can produce three-dimensional models and then manipulate this model in a variety of ways. This also allows the architect to change the dimensions or the design of the building. Virtual reality software can display a “walk through” model of the building before construction even begins.

In Exercises 1–4, use the following information.

An architect is designing an office building that is to be a width of 50 feet, a length of 50 feet, and a height of 100 feet. A scale model of the same building is to have a width of 18 inches, a length of 18 inches, and a height of 36 inches.



1. Find the scale factor of the office building to the model.
2. The entrance into the office building is 8 feet high by 7 feet wide. Find the height and the width of the entrance on the scale model. Round your answer to one decimal place.
3. Two windows on either side of the main entrance measure 3 inches wide and 2 inches high on the scale model. Find the height and the width on the actual building. Round your answer to one decimal place.
4. You want to add a window over the entrance to the building. Determine the size that you want the actual window to be. Then find the size of the window on the scale model.