

Today you will need:

Math Notebook
Calculator
AIMS Reference Sheet

Bellwork:

1. Define perimeter and area, in your own words.
2. Solve the equations below. Simplify any radicals.

$$x^2 = 121$$

$$4x^2 = 80$$

$$x^2 - 6x + 8 = 0$$

3. If a rectangle has sides 4 and 7, what is the perimeter?

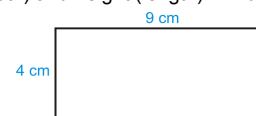
9.1 Area and Perimeter**Areas and Perimeters of Squares and Rectangles**

Perimeter: The distance around a shape. Or, the sum of all the edges of a two-dimensional figure.

The perimeter of any figure must have a unit of measurement attached to it. If no specific units are given (feet, inches, centimeters, etc), write "units."

Area: The measure of how much space there is on a flat surface. Different shapes have different ways to find the area.

Area of a Rectangle: The area of a rectangle is the product of its base (width) and height (length) $A = bh$.



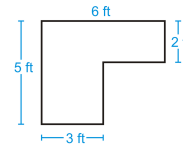
Area Postulates

Congruent Areas Postulate: If two figures are congruent, they have the same area. (This postulate needs no proof because congruent figures have the same amount of space.) However, two figures with the same area are not necessarily congruent.

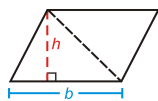
Example: Draw two different rectangles with an area of 36 cm^2

Area Addition Postulate: If a figure is composed of two or more parts that do not overlap each other, then the area of the figure is the sum of the areas of the parts.

Example: Find the area of the figure below. You may assume all sides are perpendicular.



Area of a Triangle: $A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$

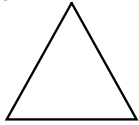


Note: If the triangle is a right triangle, then the height and base would be the legs of the right triangle. If the triangle is an obtuse triangle, the altitude, or height, could be outside of the triangle.

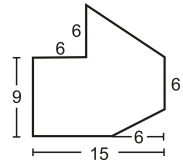
Example: Find the area and perimeter of the triangle.



Given the equilateral triangle with a perimeter of 30 inches.
Find the area to the nearest square inch.



Example: Find the area of the figure below.



Ed's parents are getting him a new bed. He has decided that he would like a king bed. There are two types of king beds; a Standard King and a California King. The Standard King has 76" x 80" dimensions, while the California King is 72" x 84" (both dimensions are width x length).

Which bed has a larger area to lie on? Which one has a larger perimeter? If Ed is 6'4", which bed makes more sense for him to buy?