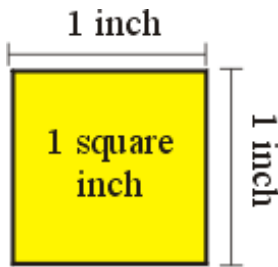


Area of Rectangles

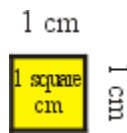
When we think of the **area** of something, we think how much ground it is *covering* (or would cover). For example, the football field covers a certain amount of ground. The stamp covers a tiny amount of ground if placed on ground. A sheet of paper covers more than a stamp but less than a football field.

Area is always measured in *squares of some size*. People often use square inches, square feet, square miles, square centimeters, and square meters for measuring area.

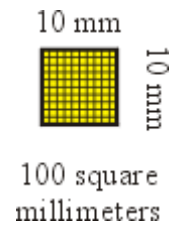
We can use the superscript "²" with a unit of length to indicate the word "square". For example: 8 in² means 8 square inches, and 120 cm² means 120 square centimeters.



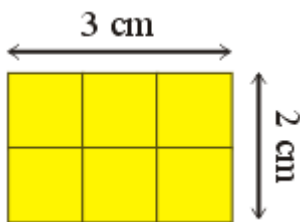
The area of this square is 1 square inch or 1 sq².



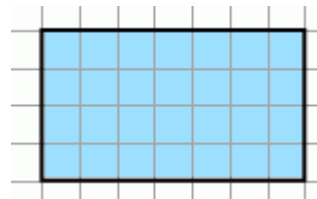
The area of this square is 1 square centimeter, 1 cm²



Each tiny square has an area of 1 square millimeter, or 1 mm².

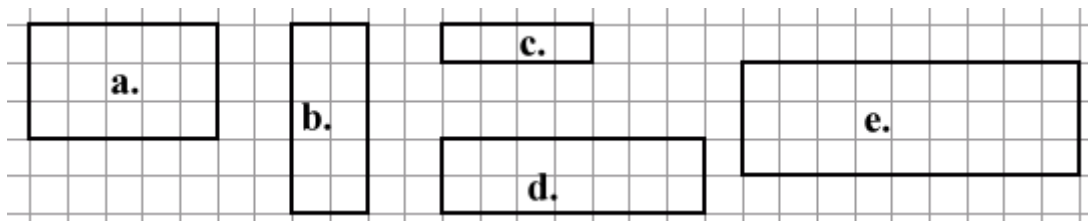


The total area of this rectangle is 6 cm², or 6 square centimeters.

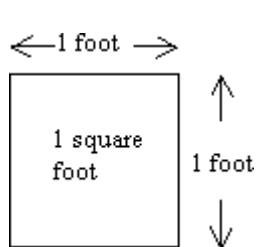


If no particular unit of length is given for the sides of a rectangle, we just use the word "unit". The sides are 7 and 4 units, and the area is 28 square units.

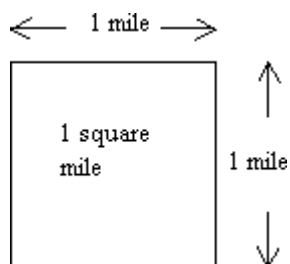
1. Find the areas of these rectangles. No particular unit is given, so use "square units".



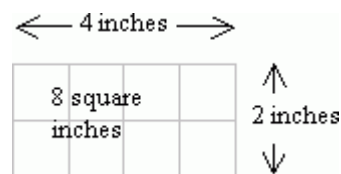
The following pictures are *not* to scale. They just illustrate some other units of area that we cannot easily draw on this page.



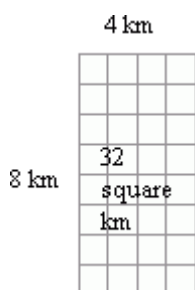
The area of this square is 1 square foot or 1 ft^2 .



The area of this square is 1 square mile, or 1 mi^2

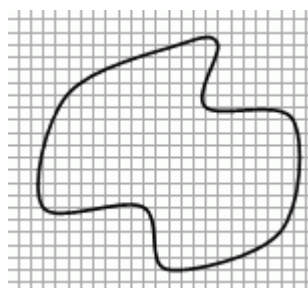


You can use multiplication to find how many square inches this rectangle covers: $2 \text{ in} \times 4 \text{ in} = 8 \text{ in}^2$.



Here again multiplication does the trick:

$$8 \text{ km} \times 4 \text{ km} = 32 \text{ km}^2.$$



If the figure is some other shape than a rectangle, we still use little squares to measure its area. It is just more difficult to find out how many little squares it covers, and we may have to use partial (fractional) squares as well.

You can find the area of a rectangle by multiplying the side lengths.

2. Draw a *square* whose area is...

a. 4 square inches

b. 9 square centimeters

c. 1 square foot
(on separate paper)