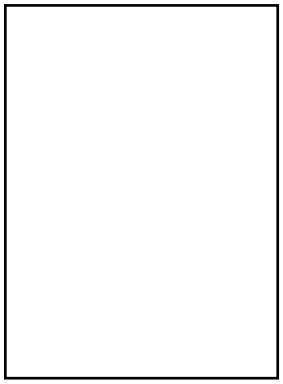
Lesson 2

Area of Rectangles

1. Determine the area of a rectangle, to the nearest tenth of a square centimetre, with a length of 12 cm and a width of 172 mm.



Step 1: Change the measurement that is in millimetres to centimetres.

172 mm = 17.2 cm

Step 2: Calculate the area of the rectangle, using 12 cm as the length and 17.2 cm as the width.

$A_{rectangle} = lw$
$= 12 \text{ cm} \times 17.2 \text{ cm}$
$= 206.4 \text{ cm}^2$

The rectangle's area is 206.4 cm^2.

2. Determine the area of a rectangle, in square inches, with a length of 4 inches and a width of 11 cm.

Step 1: Change the measurement that is in centimetres to inches.

$$\frac{y}{11\ cm} = \frac{1\ in}{2.54\ cm}$$

$$\frac{y}{\cancel{11\ cm}} \times \cancel{11\ cm} = \frac{1\ in}{2.54\ \cancel{cm}} \times 11\ \cancel{cm}$$

$$y = \frac{1\ in \times 11}{2.54}$$

$$y = 4.3\ in$$

Step 2: Calculate the area of the rectangle, using 4 inches as the length and 4.3 inches as the width.

$A_{rectangle} = lw$
$= 4\ in \times 4.3\ in$
$= 17.2\ in^2$

The rectangle's area is approximately 17.2 in^2.

3. The area of a rectangular backyard is 255 m^2. If the backyard is 17 m long, how wide is the backyard?

$$A_{rectangle} = lw$$
$$255\ m^2 = 17\ m \times w$$
$$\frac{255\ m^2}{17\ m} = \frac{\cancel{17\ m} \times w}{\cancel{17\ m}}$$
$$15\ m = w$$

The backyard is 15 m wide.