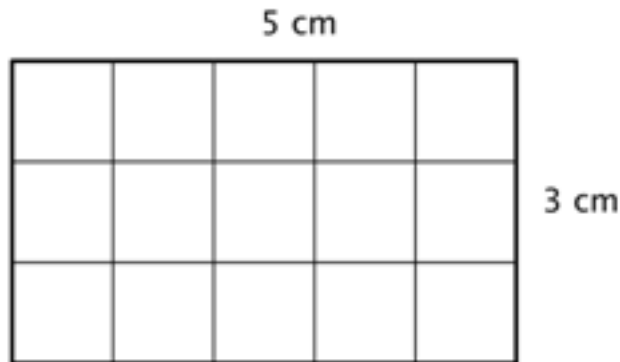


# AREA Instructional Sheet

The AREA is the space occupied by a flat shape or surface of an object.

To calculate area, you need to multiply some numbers.

## 1) Calculating the area of a rectangle (including a square)

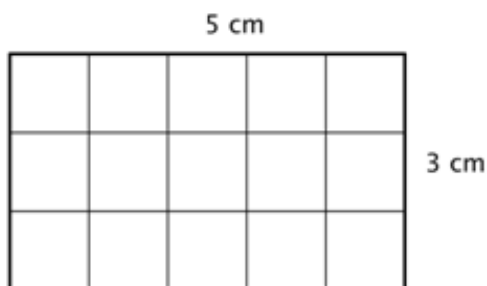


- this rectangle is 5 cm long and 3 cm wide (or high)
- if you counted up all of the squares on the inside, you would have 15 squares
- **you would say that the above rectangle has an area of 15 square centimetres**

*Now, we don't want to draw in lines (and squares) every time we calculate area. Instead, we can make a simple math calculation for the area of a rectangle.*

**\*\*\* To calculate the area of a rectangle, we just need to multiply the length and width \*\*\***

### Example 1



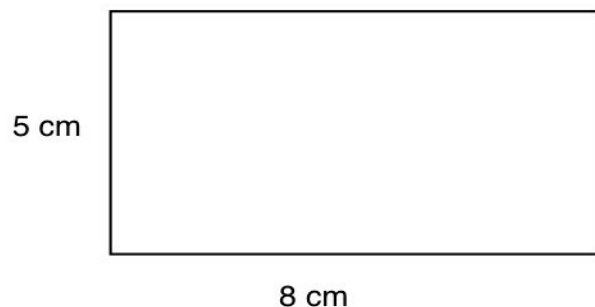
Area (Rectangle) = length x width

$$A = l \times w$$

$$A = 5 \times 3$$

$$A = 15 \text{ cm}^2$$

### Example 2



Area (Rectangle) = length x width

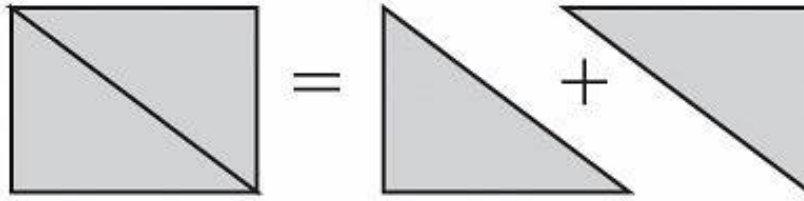
$$A = l \times w$$

$$A = 8 \times 5$$

$$A = 40 \text{ cm}^2$$

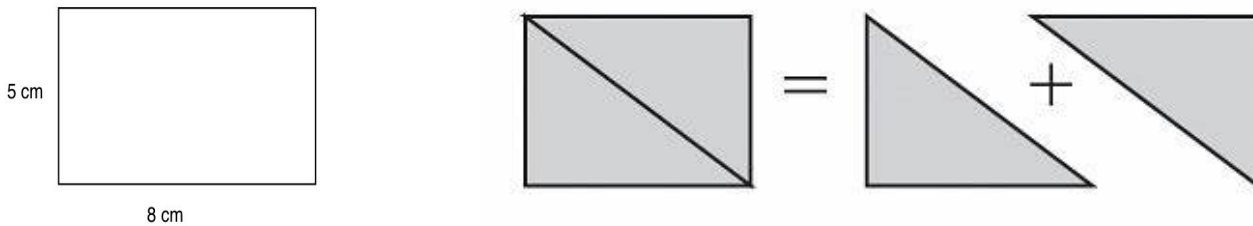
Remember to always show your units as squared (or as a power of 2)

## 2) Calculating the area of a triangle



Remember that a rectangle (quadrilateral) can always be divided into two equal triangles. If the area of a rectangle is length x width, then the area of one of the triangles (half the rectangle) is  $\frac{1}{2}$  of length x width, or  $\frac{1}{2}$  x length x width, or  $\frac{1}{2}$  x (l x w)

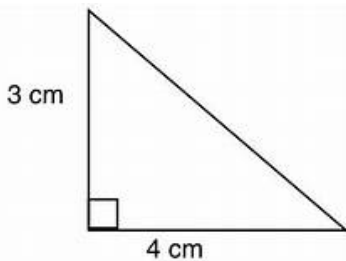
Let's look at an example, using the same rectangle



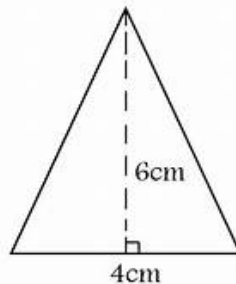
- the area of the rectangle on the left is 40 cm<sup>2</sup> (5 x 8)
- if the left rectangle is the same as the right rectangle, then both must be 40 cm<sup>2</sup>
- that means that each triangle is half, or 20 cm<sup>2</sup> (half of 40cm<sup>2</sup>)

- in triangles, the length is called the **base (b)** and the width is called the **height (h)**
- if each triangle is  $\frac{1}{2}$  of length x width, then it is also  $\frac{1}{2}$  of base x height

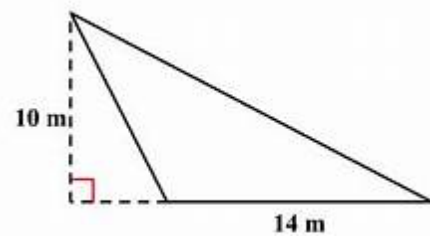
Example 1



Example 2



Example 3



**Area (Triangle) =  $\frac{1}{2}$  x (base x height)**

$$A = \frac{1}{2} \times (4 \times 3)$$

$$A = \frac{1}{2} \times 12$$

$$A = 6 \text{ cm}^2$$

$$A = \frac{1}{2} \times (4 \times 6)$$

$$A = \frac{1}{2} \times 24$$

$$A = 12 \text{ cm}^2$$

$$A = \frac{1}{2} \times (14 \times 10)$$

$$A = \frac{1}{2} \times 140$$

$$A = 70 \text{ cm}^2$$

\*\*\*remember to always show your units for area as squared (to the power of 2)\*\*\*