Dr Oliver Mathematics
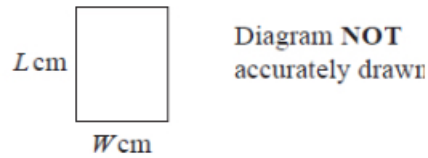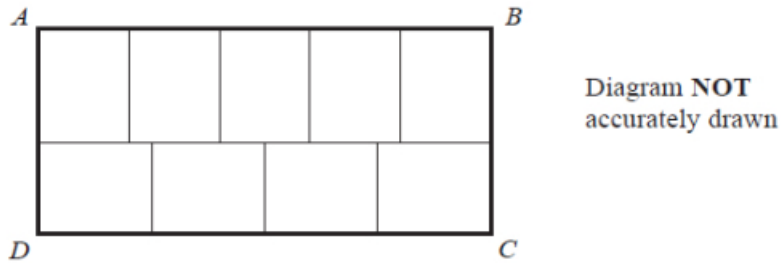## Worked Examples
Length 1

From: Edexcel GCSE Mathematics (9-1) Practice Tests Set 18: Paper 2H/3H

1. Yasmin has some identical rectangular tiles. (5)
   Each tile is L cm by W cm.

Diagram **NOT** accurately drawn

Using 9 of her tiles, Yasmin makes rectangle $ABCD$, shown in the diagram below.

Diagram **NOT** accurately drawn

The area of $ABCD$ is $1\,620$ cm^2.

Work out the value of L and the value of W.

Solution

Well, the area of a single tile is

$$\frac{1\,620}{9} = 180 \text{ cm}^2.$$

Now, (count them!) five Ws equals four Ls:

$$5W = 4L \Rightarrow W = \tfrac{4}{5}L.$$

Finally,

$$LW = 180 \Rightarrow L(\tfrac{4}{5}L) = 180$$
$$\Rightarrow \tfrac{4}{5}L^2 = 180$$
$$\Rightarrow L^2 = 225$$
$$\Rightarrow L = 15$$
$$\Rightarrow W = \tfrac{4}{5} \times 15$$
$$\Rightarrow W = 12;$$

hence,

$$\underline{L = 15 \text{ and } W = 12}.$$