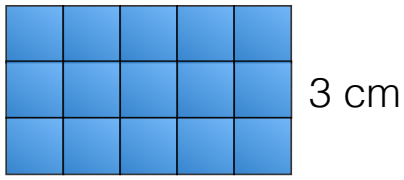
G16a Area of Rectangles © BossMaths

Alpha Exercise

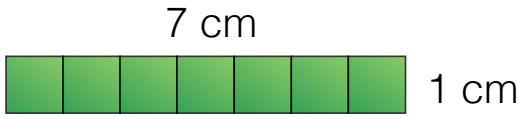
Find the area of each of the following rectangles:

(1)



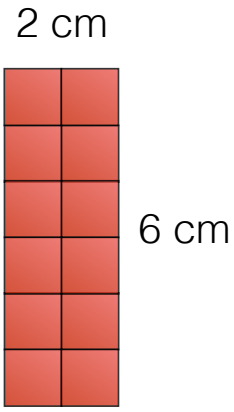
15 cm²

(2)



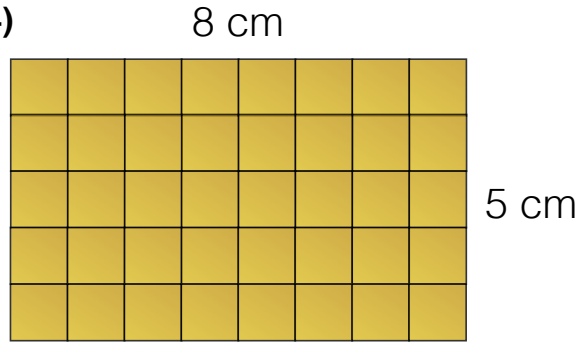
7 cm²

(3)



12 cm²

(4)



40 cm²

How many 2 x 1 cm tiles can you fit into each of these four rectangles?

1) 7 tiles
2) 3 tiles
3) 6 tiles
4) 20 tiles

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β

Beta Exercise

Find the area of each of the following rectangles:

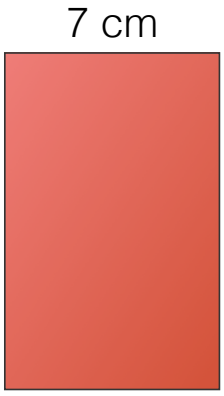
(1)

$6 \times 5 = 30 cm^2$

(2)

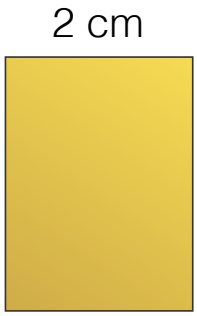
$10 \times 3 = 30 cm^2$

(3)



$7 \times 11 = 77 cm^2$

(4)



$2 \times 4.5 = 9 cm^2$

How many 2 x 1 cm tiles can you fit into each of these four rectangles?

1) 15 tiles
2) 15 tiles
3) 38 tiles
4) 4 tiles

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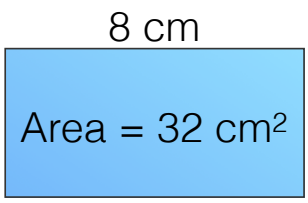
γ

Gamma Exercise

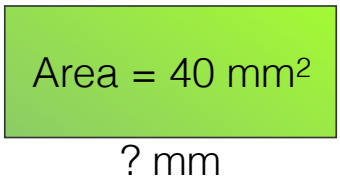
Find the missing numbers:

(1)



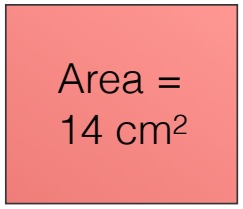
$\frac{32}{8} = 4$ cm

(2)



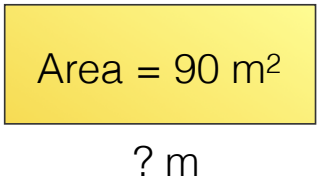
$\frac{40}{4} = 10$ mm

(3)



$\frac{14}{4} = \frac{7}{2} = 3.5$ cm

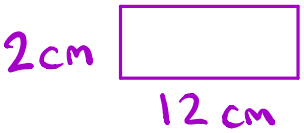
(4)

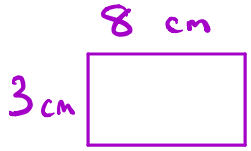


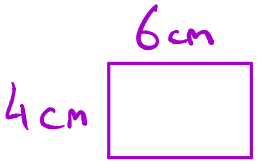
$\frac{90}{6} = \frac{30}{2} = 15$ cm

Sketch three different rectangles with an area of 24 cm². Label the lengths and widths of all three rectangles.

e.g.







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Explain the mistake

Dannii says that the area of this rectangle is 1 cm^2 because you can only fit one whole 1 cm x 1 cm square into the rectangle.

Dannii is wrong about the area. Explain why.

The area does not have to be a whole number.

The area is $1 \times 1.5 = 1.5cm^2$

Exam-style question 1

a) What is the area of a rectangular patio measuring 25 feet wide and 30 feet long?

$25 \times 30 = 750$ square feet

b) How many 1 foot x 1 foot slabs are needed to tile the patio?

750

c) If each slab costs £5, how much would it cost to buy enough to tile the whole patio?

$$\begin{array}{r} 750 \\ \times \quad 5 \\ \hline 3750 \\ {\scriptstyle 2} \end{array}$$

£3750

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Exam-style question 2

a) What is the area, in cm^2, of a 1 m x 1 m square?

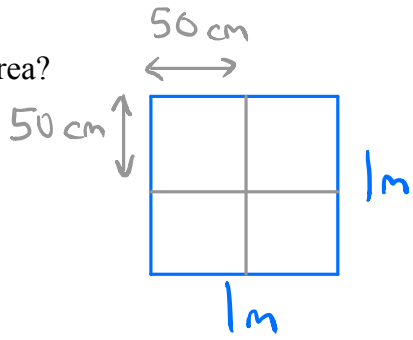
$100 \times 100 = 10{,}000\ cm^2$

b) What is the area, in cm^2, of a 50 cm x 50 cm square?

$50 \times 50 = 2500\ cm^2$

c) How many 50 cm x 50 cm tiles are needed to cover a 1 m^2 area?

$\frac{10{,}000}{2500} = 4$ tiles



d) How many 50 cm x 50 cm tiles are needed to cover a rectangular room measuring 2 m x 4 m?

$2 \times 4 = 8\ m^2$

Each $1\ m^2$ requires 4 tiles – from part (c)

So the room needs $8 \times 4 = 32$ tiles.

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Challenge

You have 120 metres of fencing. You want to use this fencing to enclose a rectangle or square of the largest possible area. What are the dimensions of the shape you enclose?

A 30m x 30m square