

# Similar Figures

also known as dilations  
have scale factors

Corresponding angles are congruent.  
Corresponding sides are  
proportional.

**SCALE FACTOR**

$$\frac{\text{new}}{\text{old}}$$

**OR**

$$\frac{\text{image}}{\text{pre-image}}$$

Ex  $\triangle CAB \sim \triangle DOG$

Identify the congruent angles.

$\sim$  means similar

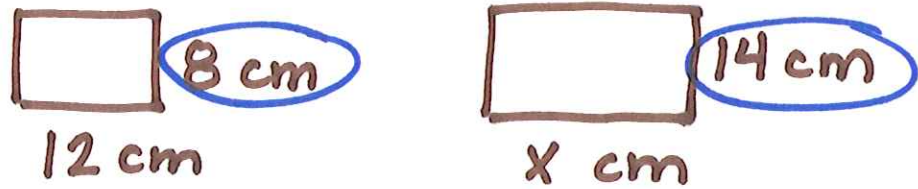
$\triangle CAB \sim \triangle DOG$

$$\angle C \cong \angle D$$

$$\angle A \cong \angle O$$

$$\angle B \cong \angle G$$

EX The rectangles are similar.  
Find the value of  $x$ .



Step 1: Identify the corresponding sides.

Step 2: Set up the proportion.

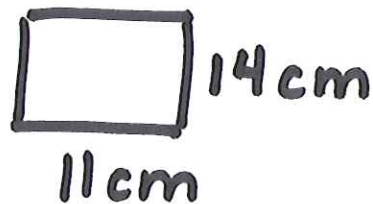
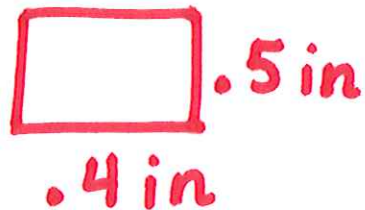
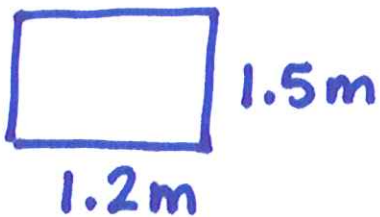
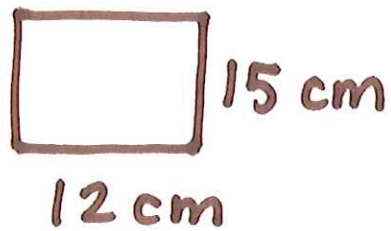
$$\frac{8}{12} = \frac{14}{x} \quad \text{OR} \quad \frac{8}{14} = \frac{12}{x}$$

Step 3: Solve.

$$\frac{14(12)}{8} = 21 \quad \text{OR} \quad \frac{14(12)}{8} = 21$$

21 cm

EX Which rectangles are similar to the given rectangle?



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Find the ratio of sides.

$$\frac{15}{12} = \frac{5}{4}$$

$$= 1.25$$

$$\frac{1.5}{1.2} = \frac{5}{4} = 1.25$$

$$\frac{.5}{.4} = \frac{5}{4} = 1.25$$

the red  
↓ blue

$$\frac{14}{11} = 1.27$$