Guide to:
Similar shapes (lengths)

maths Links

Explanation:

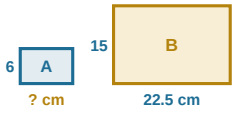
Two shapes are mathematically **similar** if one is an enlargement of the other: corresponding angles are equal and corresponding sides are in the same ratio. First find the **scale factor k =** $\frac{\textbf{new length}}{\textbf{old length}}$ using two corresponding known sides.

Multiply by the scale factor to find a missing side on the larger shape, or divide by the scale factor to find a side on the smaller shape. When a smaller triangle is inside a larger triangle with parallel bases, sketch the two triangles separately using the **full side length** of the large triangle.

Example 1: Rectangles A and B are similar. Width of A is **6 cm** and width of B is **15 cm**. Length of B is **22.5 cm**. Find the length of A.

Solution:

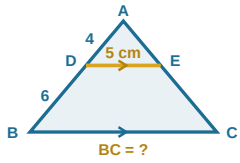
Scale factor k = 15 ÷ 6 = **2.5**
Divide for smaller shape A:
Length A = 22.5 ÷ 2.5 = **9 cm**



Example 2: In △ABC, DE is parallel to BC (D on AB, E on AC). Given **AD = 4 cm**, **DB = 6 cm** and **DE = 5 cm**, find **BC**.

Solution:

Full AB = 4 + 6 = **10 cm**
k = 10 ÷ 4 = **2.5**
BC = 5 × 2.5 = **12.5 cm**



Worksheets and other links					
Video Lesson on this topic	Video		**Dr Austin Maths**	Qs	Ans
Ken Stafford (Past Paper Qs)	Qs	Ans	**Maths Made Easy**	Qs	Ans
Maths Genie	Qs	Ans	**Metatutor**	Qs	Ans
Corbettmaths (Practice)	Qs	Ans	**E Classroom**	Qs	Ans
Corbettmaths (Textbook)	Qs	Ans	**PMT (Edexcel)**	Qs	Ans
1st Class Maths	Qs	Ans	**PMT (AQA)**	Qs	Ans

Questions by topic | **Past Papers** | **Maths worksheets**

Buy workbook | **Quizzes** | **More resources like this**

ken@mathslinks.co.uk