

SIMILAR TRIANGLES

Note Title

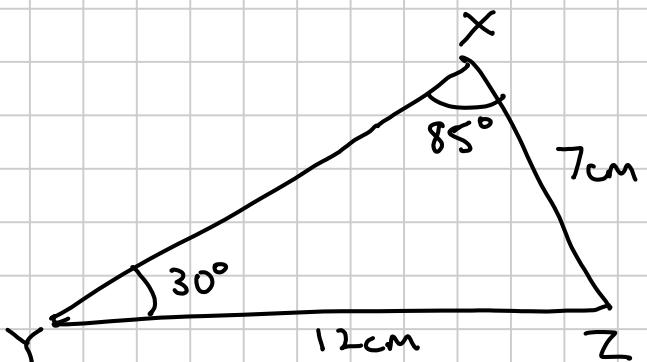
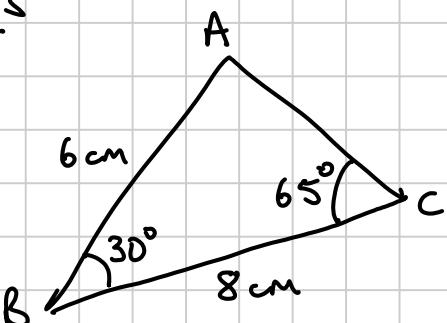
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Two shapes are SIMILAR if one is an enlargement of the other.

- ie/ the SIDES are in the same ratio
- the ANGLES are identical.

Examples

①



(a) How do we know these triangles are similar?

$$\hat{A} = 85^\circ \text{ and } \hat{Z} = 65^\circ$$

Since the triangles have the same angles, they are similar.

(b) Find the length XY

side to find $\rightarrow \frac{XY}{b}$ ← from same triangle as XY
 corresponding side in other triangle $\rightarrow \frac{b}{6}$ ← from same triangle as 6

$$(x6) \quad (x6)$$

$$XY = \frac{12}{8} \times 6$$

$$= \underline{\underline{9 \text{ cm}}}$$

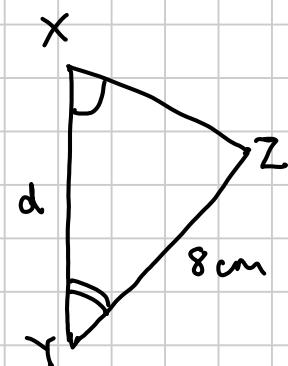
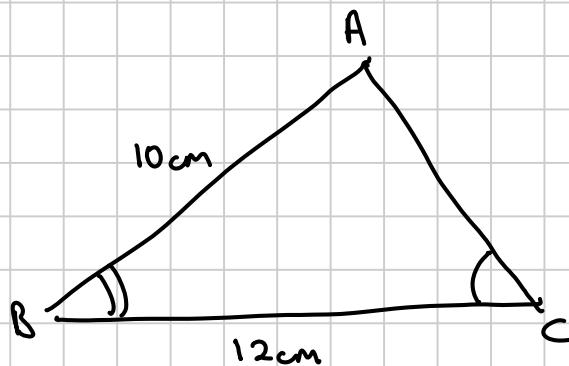
(c) Find AC

$$\frac{AC}{7} = \frac{8}{12}$$

$$(x7) \quad (\times 7)$$

$$AC = \frac{8}{12} \times 7 = \frac{14}{3} = 4\frac{2}{3} \text{ cm}$$

(2)



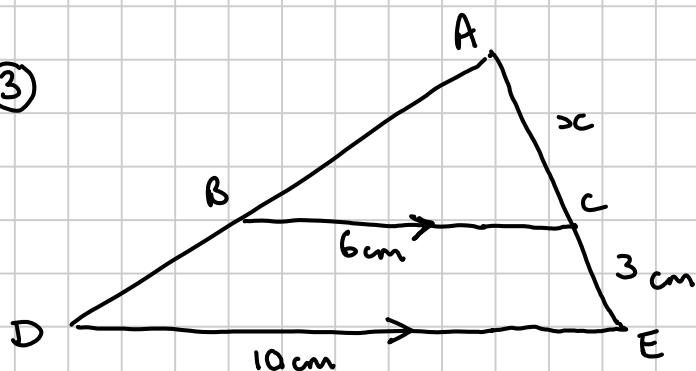
Find the length d .

$$\frac{d}{12} = \frac{8}{10}$$

(x12)

$$\begin{aligned} d &= 12 \times \frac{8}{10} \\ &= \frac{48}{5} \\ &= \underline{\underline{9.6 \text{ cm}}} \end{aligned}$$

(3)



Find AC

$$\frac{x}{x+3} \stackrel{?}{=} \frac{6}{10}$$

$$10x = 6(x+3)$$

$$10x = 6x + 18$$

$$4x = 18$$

$$x = \underline{\underline{4.5 \text{ cm}}}$$

