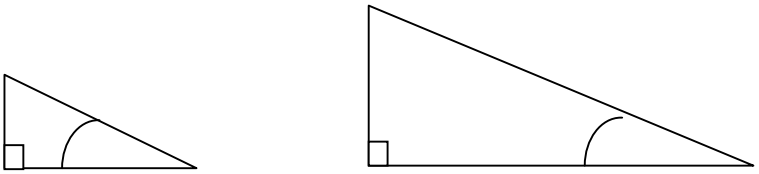
SIMILAR TRIANGLES

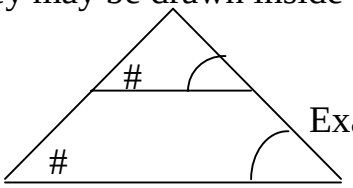
A PAIR OF SIMILAR TRIANGLES ARE **SIMILAR** BECAUSE ONE IS AN ENLARGEMENT OF THE OTHER

Triangles may be drawn next to one another:

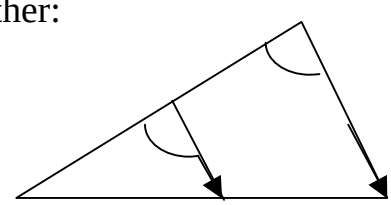


Example 1

They may be drawn inside one another:

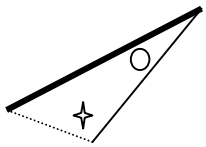


Example 2



Example 3

Or they may be turned round a bit:



Example 4

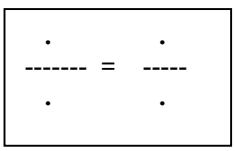
BUT THE ANGLES MUST MATCH FOR THEM TO BE SIMILAR

WHERE THERE ARE PARALLEL LINES, THEY MUST MATCH BECAUSE THEY ARE **CORRESPONDING ANGLES. (#** MATCHES **#)**

All other angles are shown if they match.

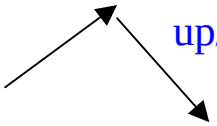
Now use the idea of an **L** shape

Set up a box



and think down/along = down/along

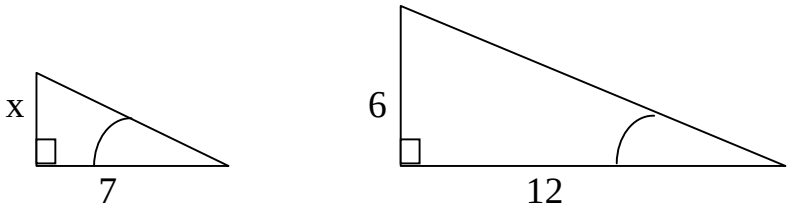
Or think



up/down = up/down

Or down/across = down/across

In Example 1:



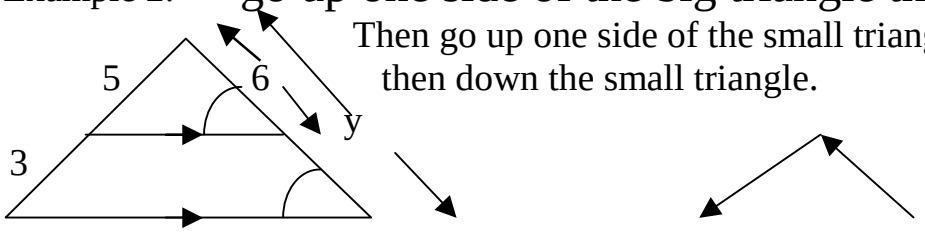
Example 1

go **down/along** with x in the top left corner. $\frac{x}{7} = \frac{6}{12}$

cross multiply the 7 $x = \frac{6 \times 7}{12}$ $\underline{x = 3.5}$

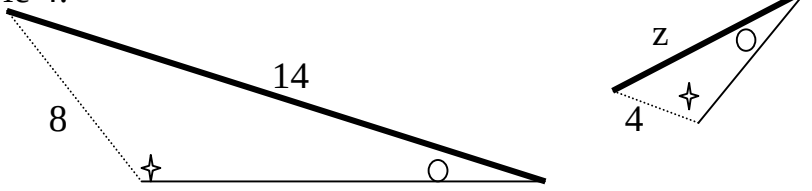
In Example 2: go up one side of the big triangle then down

Then go up one side of the small triangle then down the small triangle.



$\frac{y}{8} = \frac{6}{5}$ cross multiply the 8 $y = \frac{6 \times 8}{5}$ = $\underline{9.6}$

In example 4:

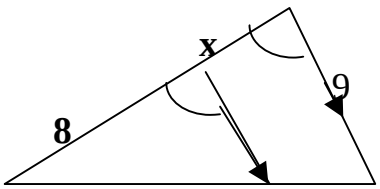


go along the z and then down the 4 (dotted) on the small triangle then, **being careful of the turned triangle**, go along the corresponding side and down the dotted side on the big triangle.

. $\frac{z}{4} = \frac{14}{8}$ cross multiply the 4 $z = \frac{14 \times 4}{8}$ = $\underline{7}$

HARD QUESTION:

Here the x is not part of a triangle so use (x + 8)



$\frac{x + 8}{9} = \frac{8}{5}$ cross multiply

$x + 8 = \frac{8 \times 9}{5} = \frac{72}{5} = 14.4$

$x = 14.4 - 8 = \underline{6.4}$