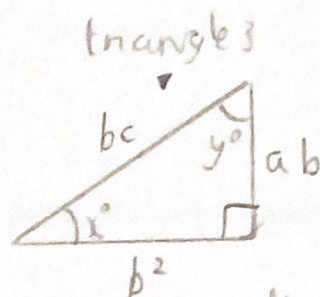
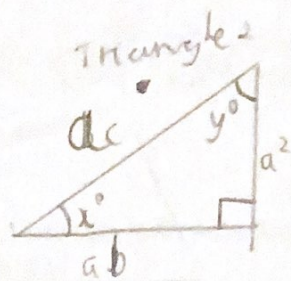
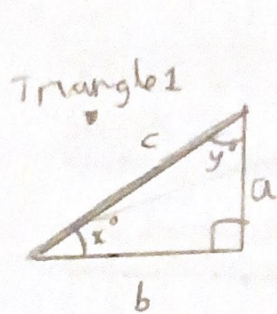
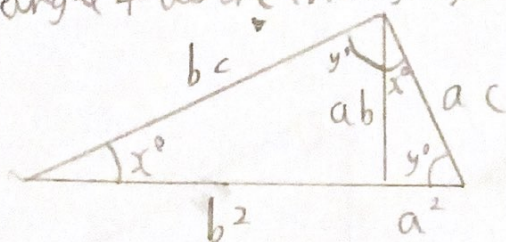


# Matter of Scale - John Year 8 Calthorpe Park school



Triangle 4 where triangles 2 and 3 are put together



The 4 triangles are similar through AA similarity. As triangle 4 is similar to triangle 1 its corresponding parts are in equal ratios.

$$\therefore a : a \text{ is the same ratio as } c : a^2 + b^2$$

$$\therefore 1 : c = c : a^2 + b^2$$

$$\therefore 1 : c = 1 : \frac{a^2 + b^2}{c}$$

$$\therefore c = \frac{a^2 + b^2}{c}$$

which is reordered to  $a^2 + b^2 = c^2$

Alternatively we can think of triangle 4 as triangle 1 enlarged by a scale factor of c.

Therefore  $(\therefore) a^2 + b^2 = c \times c$

So  $a^2 + b^2 = c^2$