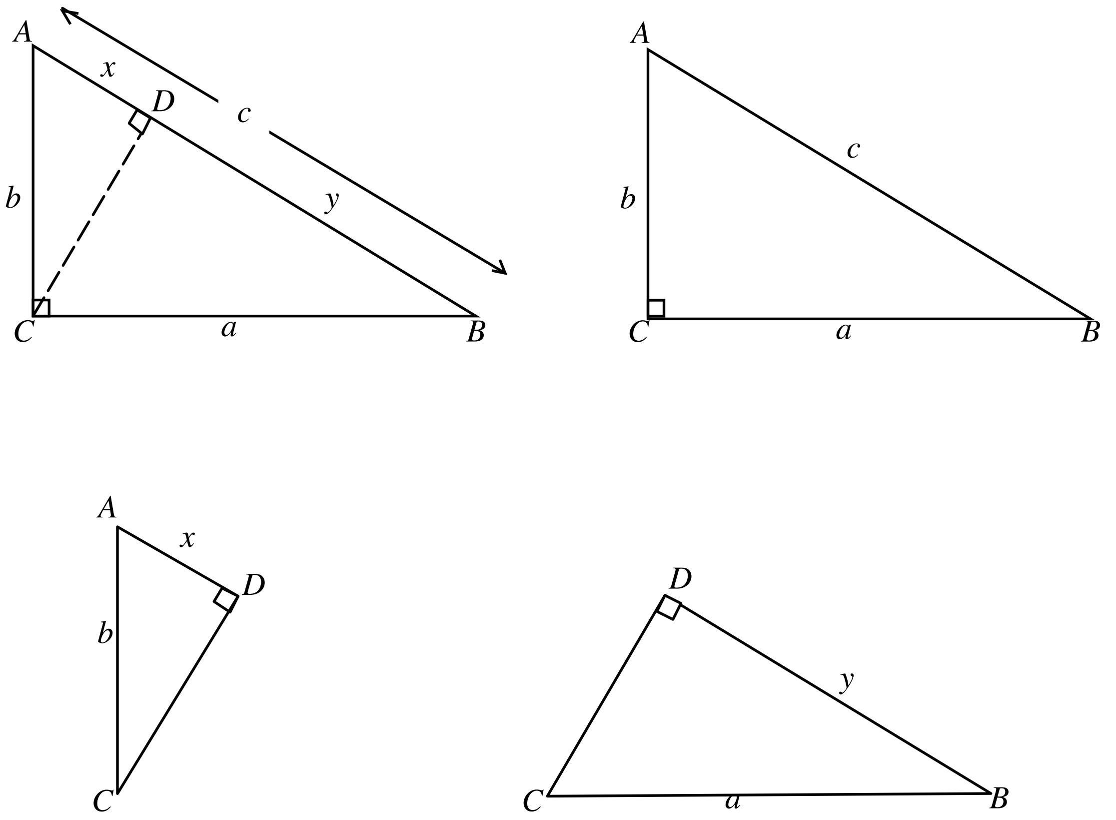
Proving Pythagoras' theorem

http://topdrawer.aamt.edu.au/Geometric-reasoning/Good-teaching/Writing-a-proof/Proving-Pythagoras-theorem/Dissected-proof

In any right angled triangle, the square on the hypotenuse is equal to the sum of the squares on the other two sides.

Aim: To prove $c^2 = a^2 + b^2$



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$\frac{c}{b} = \frac{a}{CD} = \frac{b}{y}$	In ΔABC and ΔADC
(matching sides of similar triangles)	(both 90° given)
$\angle ACB = \angle ADC$	$\therefore c^2 = a^2 + b^2$
$\therefore \Delta ABC \,\|\|\|\, \Delta ACD$	is common
$\angle A$	$\therefore \Delta ABC \,\|\|\|\, \Delta CBD$
$\therefore \frac{AB}{AC} = \frac{BC}{CD} = \frac{AC}{AD}$	$\therefore a^2 = cx$
(AAA)	$\therefore \frac{c}{b} = \frac{b}{y}$
(both 90° given)	$\therefore b^2 = cy$
$\angle B$	(AAA)
Now $a^2 + b^2 = cx + cy$	$\angle ACB = \angle BDC$
$= c(c)$	In ΔABC and ΔBDC
(matching sides of similar triangles)	$= c(x + y)$
is common	$= c^2$
$\frac{c}{a} = \frac{a}{x} = \frac{b}{CD}$	$\therefore \frac{AB}{CB} = \frac{BC}{BD} = \frac{AC}{CD}$