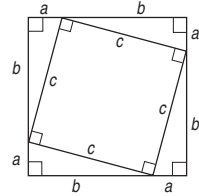


As outcomes, Year 8 pupils should, for example:

As outcomes, Year 9 pupils should, for example:

- Four identical right-angled triangles with hypotenuse of length c are placed as shown.

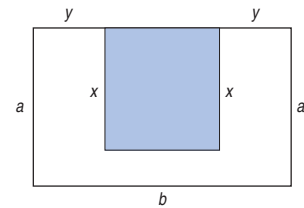


Show that the inner shape formed is a square of side c , and the outer shape formed is a square of side $a + b$.

Use the diagram to deduce a proof of Pythagoras' theorem:

$$\begin{aligned} c^2 &= (a + b)^2 - 4\left(\frac{1}{2}ab\right) \\ &= (a^2 + 2ab + b^2) - 2ab \\ &= a^2 + b^2 \end{aligned}$$

- Imagine a room with an area of carpet (shaded).



By dividing the room into rectangles in different ways, find different equivalent expressions for the floor area with no carpet, for example:

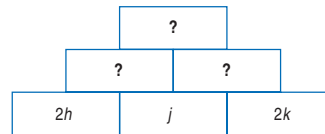
$$A = 2xy + b(a - x)$$

$$A = 2ay + (a - x)(b - 2y)$$

Multiply out the expressions to confirm that they are equivalent.

Solve problems such as:

- Prove that the product of two odd numbers is always odd.
- In this diagram, h , j and k can be any integers. The missing number in each cell is found by adding the two numbers beneath it. Prove that the number in the top cell will always be even.



What if j is replaced by $j + 1$?
What if $2h$ is replaced by h ?

- Show that:

$$(n + 1)^2 = n^2 + 2n + 1$$

Use this result to calculate 91^2 , 801^2 .

F1=	F2=	F3=	F4=	F5=	F6=
Tools	Algebra	Calc	Other	Pr-Sml	Clear Up
■	11 ²				121
■	21 ²				441
■	31 ²				961
■	41 ²				1681
MAIN RND AUTO FUNC BATT 4/30					