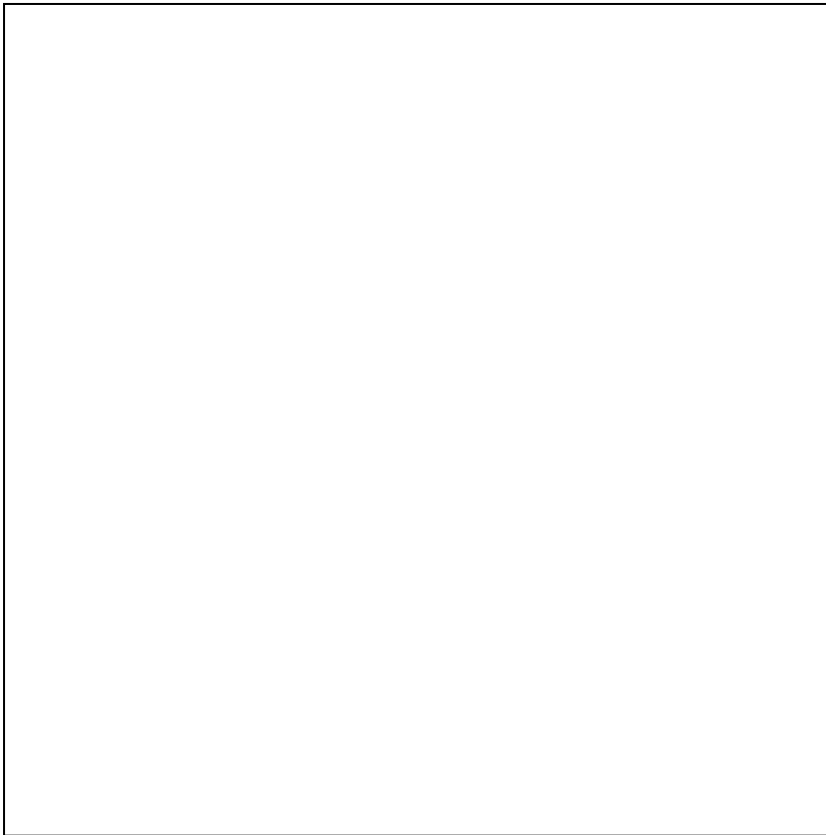


A clever trick to work out lengths in triangles

Throughout this, do not assume that the shapes you are given are to scale.

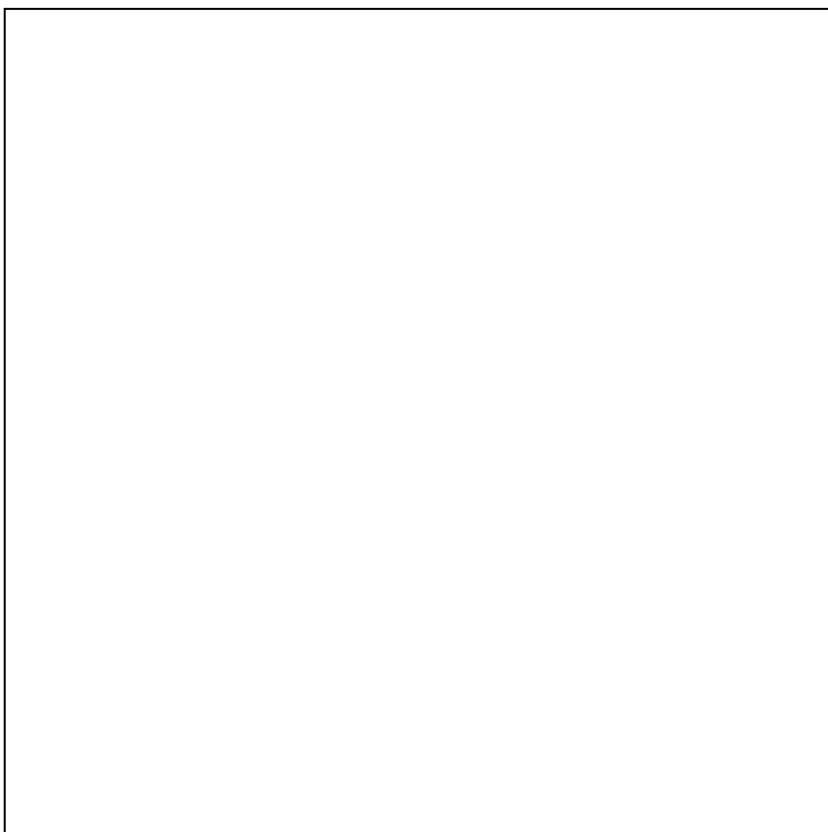
Place **four** blue triangles in this square to leave two squares blank.



Calculate the area of each of these small squares:

Use these to work out the total area not covered by the blue triangles

Place the other four blue triangles in the same square but in a different way, to leave a single square remaining uncovered in the middle.



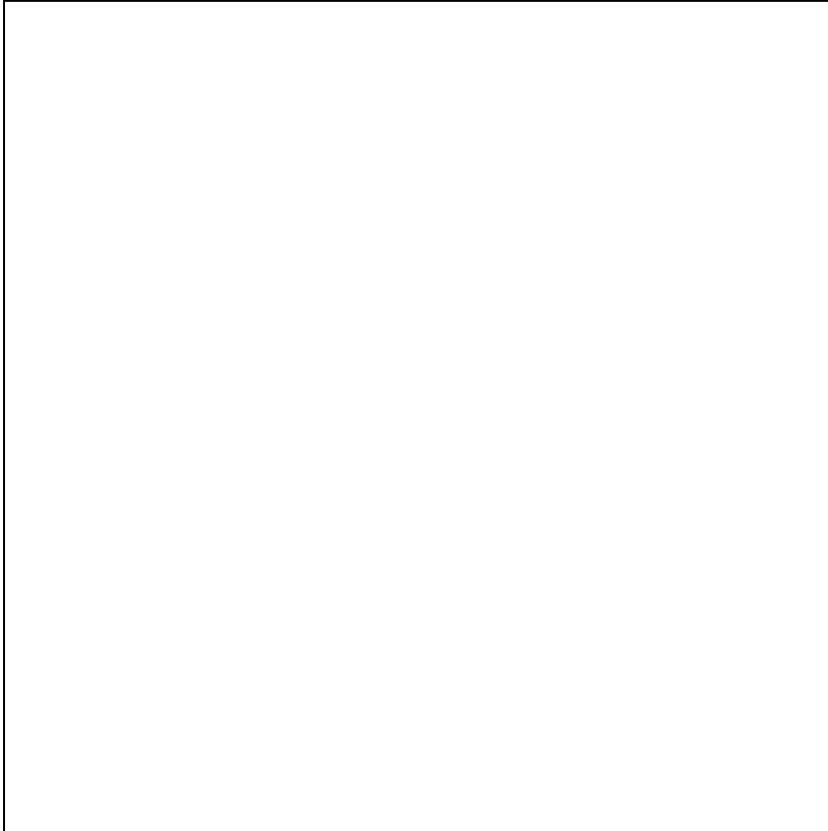
By thinking about the previous arrangement of triangles, what must the area of the uncovered square be?

Use this area to work out the length of the unknown side in the triangle.

Marvel at the amazing trick you have just invented for working out the length of the longest side of a right angled triangle.

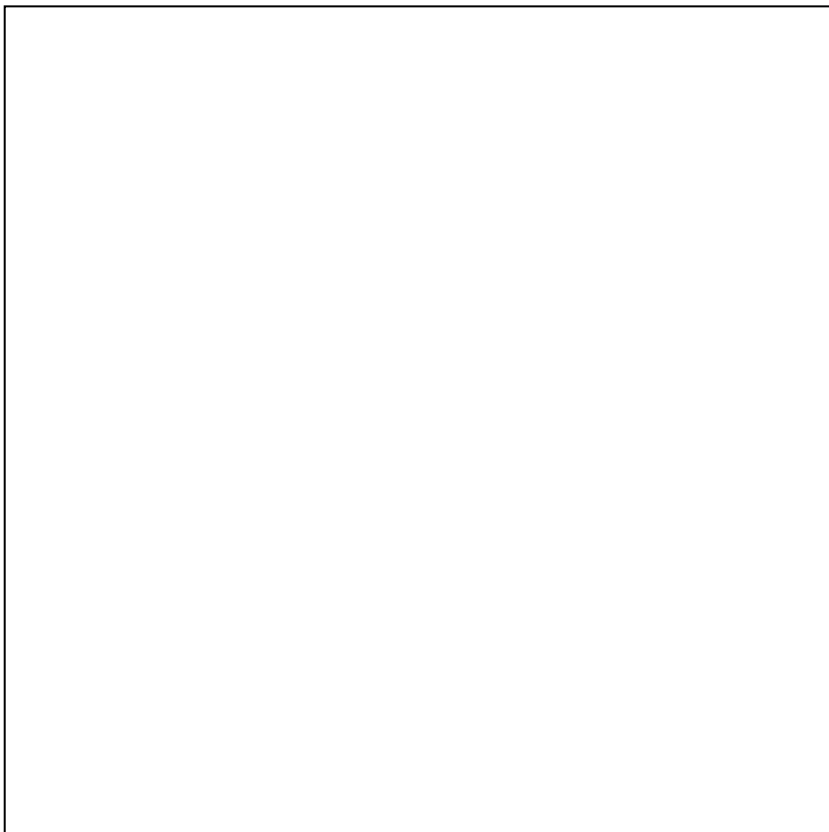
Repeat the process with the red set of triangles

Place four red triangles in this square to leave one large square uncovered in the middle



Calculate the area of the uncovered square

Place the other four red triangles in the same square but in a different way, to leave two smaller squares uncovered.



Calculate the area of the smaller of these two squares

By thinking about the previous arrangement of triangles, what must the area of the larger uncovered square be?

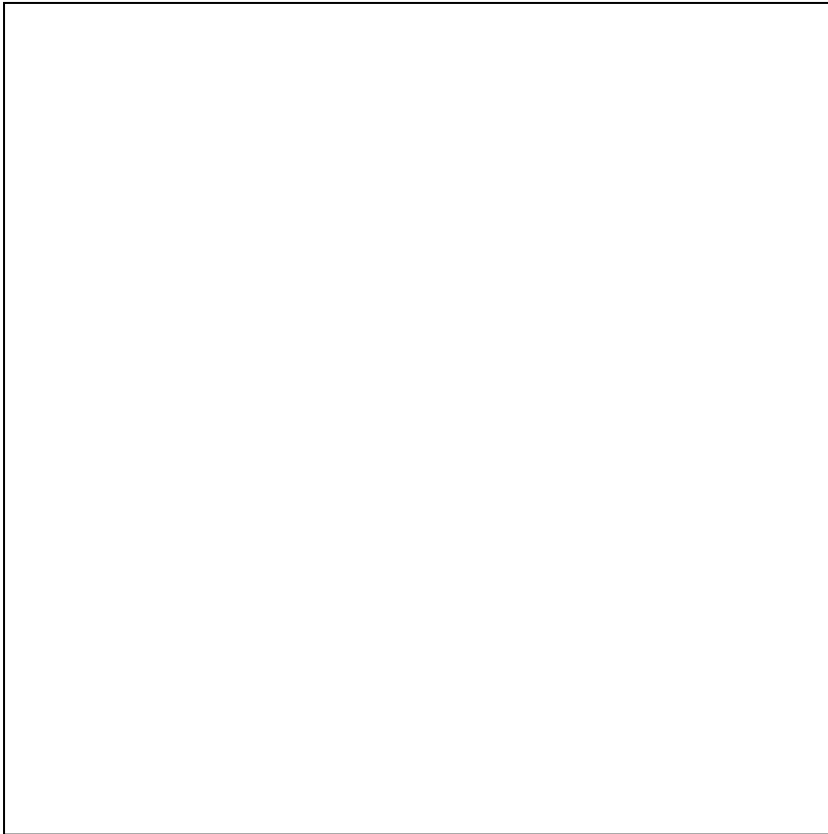
Use this area to work out the length of the unknown side in the triangle.

What was different about the strategy for the blue and red triangles?

Now repeat in your books with the green triangles.

Now repeat the process with the green triangles

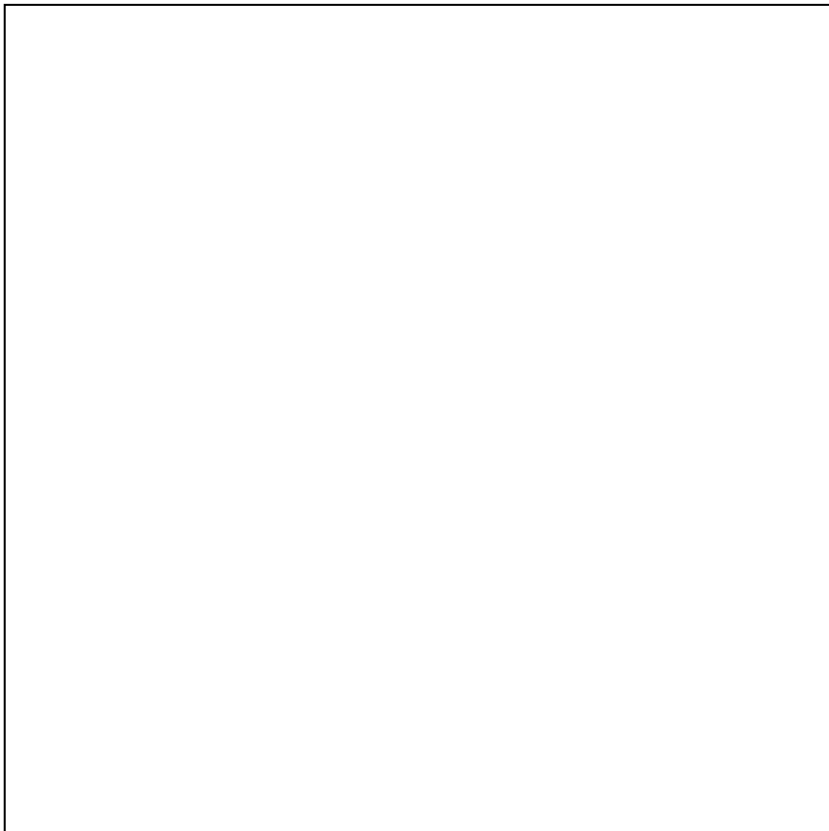
Place four green triangles in this square to leave two smaller squares uncovered.



Calculate the area of each of these small squares, leaving your answer in terms of side 1 and side 2.

Use these to work out the total area uncovered:

Place the other four green triangles in the same square but in a different way, to leave a single square remaining uncovered in the middle.



Find the area of the large square in terms of hyp.

The two missing areas (from the first picture and the second picture) must be the same.

Use this to form an identity.

