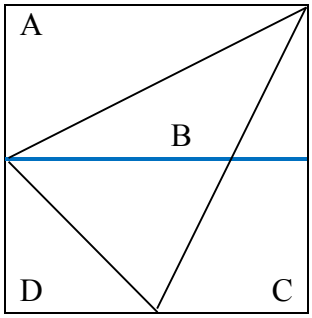
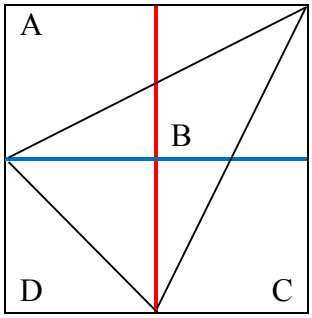
Start by labelling the triangles. Note that Triangles A, C & D are right angled, whilst Triangle B is isosceles. Triangle A = Triangle C



Draw a line across the middle of the square (make sure it's horizontal and joins the midpoints). From this you can see that Triangle A is exactly half of the upper rectangle.

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$ so Triangle A $= \frac{1}{4}$ and Triangle C $= \frac{1}{4}$

Next, draw another line joining the other two midpoints to make a vertical line.



From this you will see that Triangle D is exactly half of the bottom left quarter.

$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$ so Triangle D $= \frac{1}{8}$ and Triangle B must be $1 - \left(\frac{1}{8} + \frac{1}{4} + \frac{1}{4}\right) = \frac{3}{8}$

Now take the larger image. This is made up of 4 small images from the first part of the problem. To help you see this, divide the large picture in 4, horizontally and vertically, so you end up with 4 small equally sized squares and label them.

1	2
3	4

(i) Transpose the original small image into Box 1.

(ii) Reflect Box 1 into Box 2 vertically (Box 1 & 2 are now populated)

(iii) Reflect Box 1 and Box 2 horizontally into Boxes 3 & 4 to complete the large composite image.

The shape created in the middle is a rhombus (4 equal sides, 2 pairs of parallel opposite sides and 2 pairs of equal opposite angles). If you join the opposite vertices of a rhombus, you will create 2 lines that cross at right angles to each other.

The central rhombus is made up of 4 lots of Triangle C.

In the original picture Triangle C was a quarter of the whole image, but in the larger picture Triangle C is now only a quarter of a quarter, of the larger square.

$\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$ So Triangle C is $\frac{1}{16}$ of the larger square.

Because we already know that the rhombus is made up of 4 lots of Triangle C, a simple calculation follows:

$4 \times \frac{1}{16} = \frac{1}{4}$ So the rhombus is $\frac{1}{4}$ of the larger square.