

MATHEMATICS PROJECT

CLASS: 9

TOPIC: PYTHAGORAS THEOREM

STATEMENT: In a right angled triangle, the square of the hypotenuse is equal to the sum of the squares of other two sides.

OBJECTIVE: To verify the above theorem through activity.

PRE-ACQUIRED KNOWLEDGE: Definition of a square and triangle formula for the area of square.

MATERIAL REQUIRED:

1. Drawing sheet/ coloured chart paper
2. Geometry box
3. Pair of scissors
4. Fevistick/gum

PROCEDURE:

1. Draw any right angled triangle ABC, right angled at C on a coloured chart paper. Let the lengths of AB, BC and CA be 4 cm, 3 cm and 5 cm respectively.
2. Construct squares on AB, BC and CA. Let the colours of the squares be yellow, green and blue.
3. Make 8 exact replicas of ΔABC (Red)
4. Take 4 replicas of ΔABC along with the one replica each of green and blue squares all on a sheet as shown in figure 2.
5. Take the remaining 4 replicas of ΔABC (red) and one replica of yellow square and paste on one sheet as shown in the figure 3.

RESULT:

1. We observe that each of the figure as shown in figure 2 and figure 3 is a square of side $(a + b)$ units.
2. Therefore, area of the square in figure 2 = area of square in figure 3
3. Now 4 replicas of ΔABC is removed from both fig 2 and fig 3.
4. Hence, remaining areas of both figures are equal.
5. Hence, area of green square + area of blue square = area of yellow square
6. Hence, $a^2 + b^2 = c^2$. Hence proved.

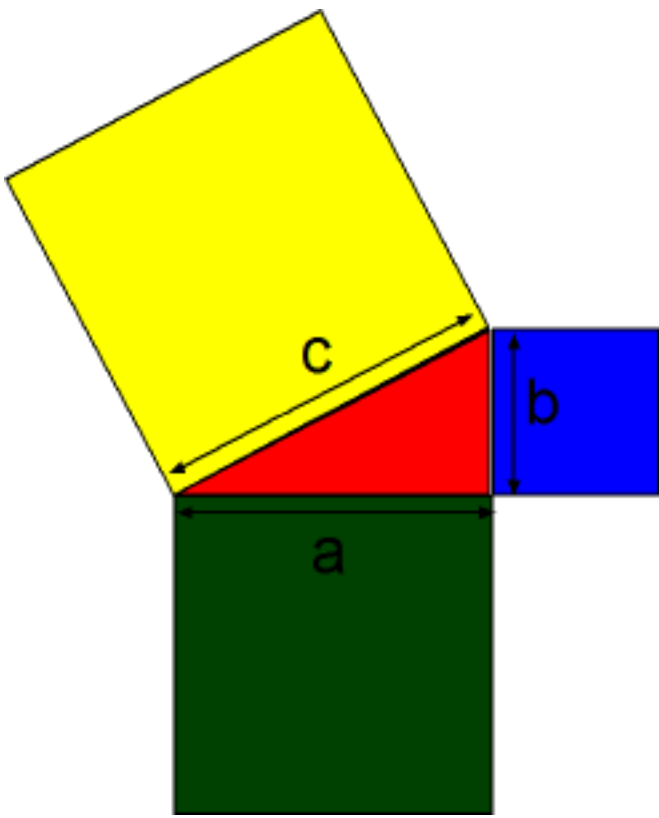


Figure 1

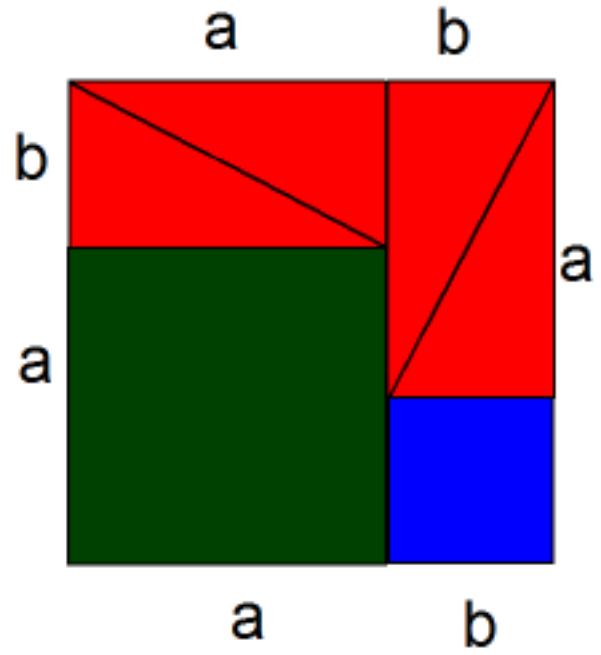


figure 2

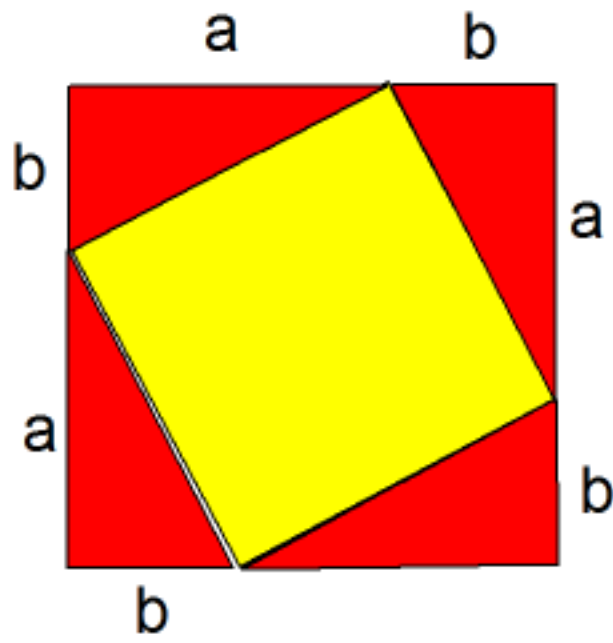


Figure 3