

TRIANGLES

Activity – 6(iii)

1. What we have to do?

To verify Pythagoras theorem

2. What is required?

Coloured Chart papers, Geometry box, Pencil colours, pair of scissors, glue stick

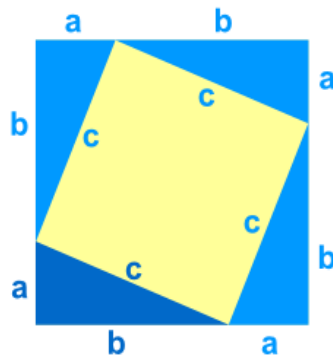
3. Time required: 30 min

4. What do we need to know?

Area of Square, Construction of parallel and perpendicular lines

5. How will you proceed?

- 1) Cut a square of side 13 cm from a coloured sheet of paper.
- 2) Cut off four congruent right triangles of sides $a = 5$ cm, $b = 12$ cm and $c = 13$ cm from some other sheet of coloured paper.
- 3) Arrange these right triangles with their hypotenuse along the sides of the square cut in step 1 above.
- 4) Cut another square of side $b - a = 12 - 5 = 7$ cm and paste it in the centre of the square of side 13 cm.



6. What have you observed?

- 1) Area of 1 right triangle = _____
- 2) Area of bigger square = _____
- 3) Area of smaller square = _____
- 4) Area of bigger square = _____ + 4 (_____)

7. What have you learnt?

From the above activity it is verified that in a right triangle, the square of the hypotenuse is equal to _____.

It means $c^2 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

8. What would you be interested in doing?

Repeat the above activity to show that area of an Equilateral triangle described on the hypotenuse (= 5 cm) of a right angles triangle is equal to the sum of the areas of equilateral triangles described on the other two sides (= 3 cm & 4 cm).

Real Life Applications:

The above concept is used in proving results in Geometry, Architecture, Navigation, Construction etc...
