

MATHEMATICS PROJECT

CLASS: 9

TOPIC: CALCULATION OF π

STATEMENT: The ratio of the circumference and the diameter of any circle is a constant known as π

OBJECTIVE: To calculate the value of π by activity .

PRE-REQUISITE KNOWLEDGE: knowledge of a circle and terms related to it.

MATERIALS REQUIRED:

1. Geometry box
2. Practical workbook
3. Scissors
4. Scale
5. Sketch pen
6. Adhesives or glue sticks
7. String rolls

PROCEDURE:

1. We are to construct circles of radii 3cm, 4 cm, 5cm, 6 cm, 6.5 cm, 7.2 cm, 8.1 cm respectively on different pages of the practical workbook.
2. Once we complete the diagrams, we roll out a string along the circumference of each of the circles drawn to just cover the boundary.
3. Cut out the string and then measure the length of the string in a metre ruler.
4. Measure the diameter of the corresponding circle.
5. Now calculate the ratio of the length of the circumference and the diameter upto 8 decimal places.
6. Find out the mean or average of all the values of π hence calculated.
7. Hence state your conclusion.

TOPIC: MID POINT THEOREM

STATEMENT: The straight line joining the mid points of any two sides of a triangle is parallel to the third side and is equal to half of it.

OBJECTIVE: To verify the above theorem by activity.

PRE-REQUISITE KNOWLEDGE: If a transversal cuts two straight lines and if a pair of corresponding angles are equal, then the straight lines are parallel.

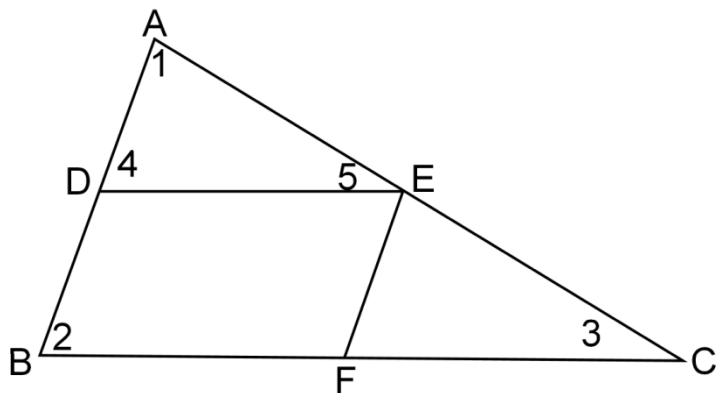
MATERIALS REQUIRED:

1. Geometry box
2. Practical workbook
3. Sheets of white paper.
4. Coloured ball point pens.
5. Scissors
6. Scale
7. Sketch pen
8. Adhesives or glue sticks

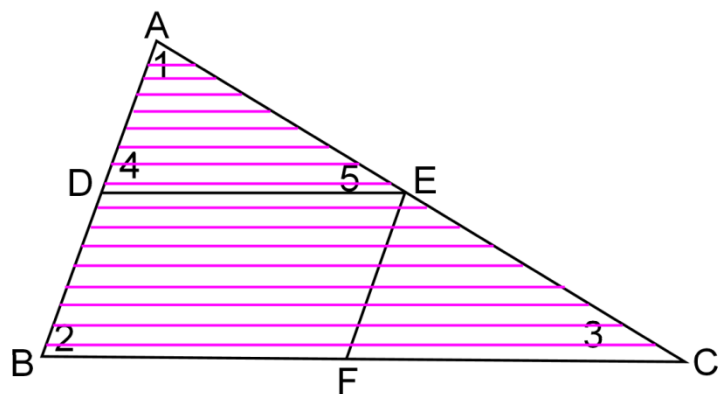
Tracing papers – 2

PROCEDURE:

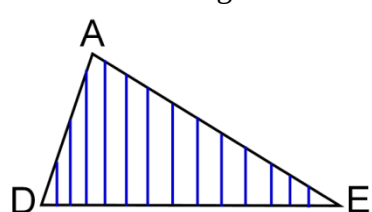
8. Draw any triangle ABC, where $AB = 5$ cm, $BC = 7$ cm and $CA = 6$ cm, on a white sheet paper and mark the mid-points D, E and F of the sides AB, AC and BC.
9. Fold the triangle along the mid-points of the two adjacent sides to form a crease in each of the cases.
10. Mark the angles 1, 2, 3, 4 and 5 as shown in the figure.



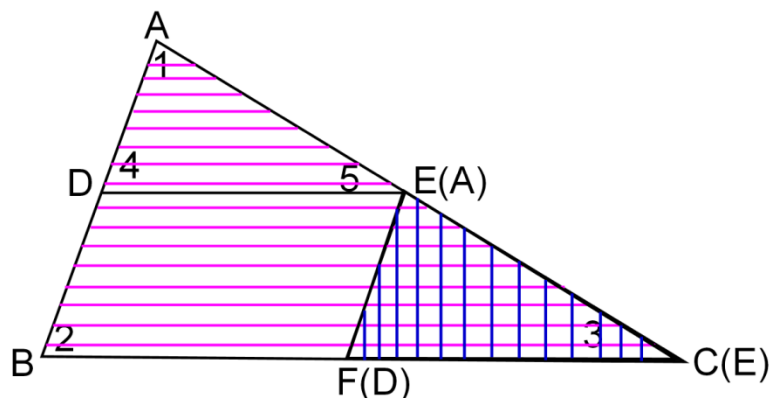
11. Draw horizontal lines in the triangle ABC by pink ball point pen.



12. Make a replica of triangle ADE on a tracing paper and draw vertical lines with blue ball point pens as shown in the diagram.



13. Paste/superimpose the triangle ADE on the triangle EFC as shown in the figure.



RESULT:

We observe that the triangle ADE exactly covers the triangle EFC and note that the vertex A of $\triangle ADE$ falls on the vertex E of $\triangle EFC$, the vertex D falls on the vertex F and the vertex E falls on C.

It also follows that $\angle 5 = \angle 3 \Rightarrow DE \parallel BC$ and $DE = \frac{1}{2}BC$. Hence the straight line joining the mid-points of any two sides of a triangle is parallel to the third side and is equal to half of it.

LAST DATE OF SUBMISSION OF PROJECT: 16TH JUNE, 2016

