Activity 10



Incentre of a triangle

Objective

To illustrate that the internal bisectors of the angles of a triangle concur at a point (called the incentre), which always lies inside the triangle

Pre-requisite knowledge

Familiarity with Activity 1A.

Material Required

Coloured papers, fevicol and a pair of scissors.

Procedure

- 1. Cut an acute angled triangle from a colored paper and name it as PQR.
- Fold along the vertex P of the triangle in such a way that the side PQ lies along PR.
- 3. The crease thus formed is the angle bisector of angle P. Similarly get the angle bisectors of angle Q and R. [Fig 10 (a)]
- 4. Repeat the same activity for a right angled triangle and obtuse angled triangle. [Fig 10 (b) and Fig 10 (c)]

Observations

- 1. We see that the three angle bisectors are concurrent and the point is called the incentre (I).
- 2. We observe that the incentre of an acute, an obtuse and right angled triangle always lies inside the triangle.

Learning Outcomes

- 1. The incentre I is equidistant from three sides of the triangle. Hence, a circle can be drawn touching all the sides, with I as its center. This circle is called In-circle.
- 2. The angle bisectors of a triangle can never form a triangle since they pass through a point.

Remark

The teacher may encourage the students to provide a proof of concurrence and of the observation of the location of the incentre.





Fig 10(b)

