ACTIVITY 3

To verify by paper cutting and pasting, that the sum of the exterior angles drawn in order, of any polygon is 360°.

Learning Objective : To understand the exterior angles property of a polygon.

Pre-requisite : Familiarity with exterior angles of a polygon and a complete angle.

Materials Required : Coloured and white sheets of paper, a ruler, a pencil, a pair of scissors and a pair of compasses.

Procedure : (a) For triangle

Step 1. Draw a triangle on a coloured sheet and name it ABC. Make exterior angles in an order at each vertex of this triangle and name them as X, Y and Z. Fig. 3(a).

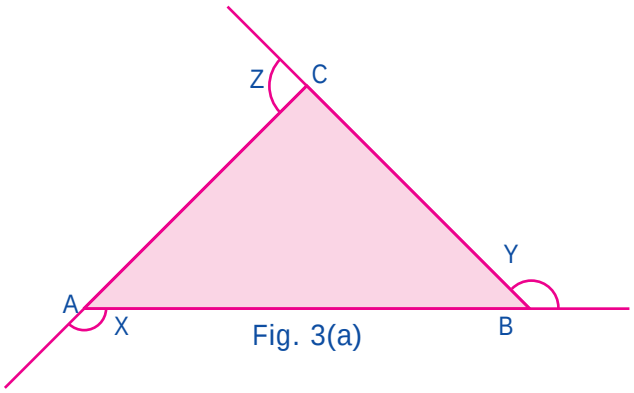

Fig. 3(a)

Step 2. Cut out all the three exterior angles. Paste them on a white sheet of paper at a point P so that there is no gap between them as shown in Fig. 3(b).

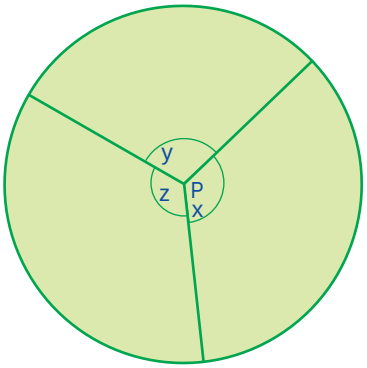

Fig. 3(b)

Observations.

1. All angles together form a ..... angle (straight, reflex, complete)
2. The sum of exterior angles of a triangle taken in order is.....

Procedure : (b) For polygons

Step 4. Draw a quadrilateral, a pentagon and a hexagon on a coloured sheet of paper. Mark their exterior angles taken in order at each vertex.

Step 5. Repeat Step 2 for each of these polygons. [See Fig. 3(f), Fig. 3(g) and Fig. 3(h)]

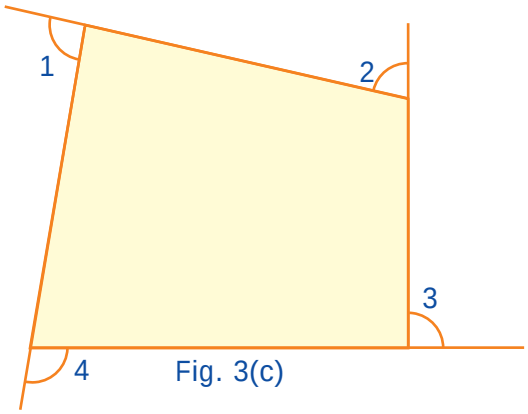

Fig. 3(c)

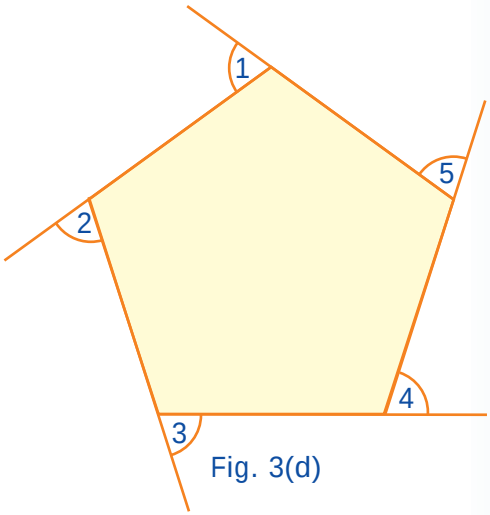

Fig. 3(d)

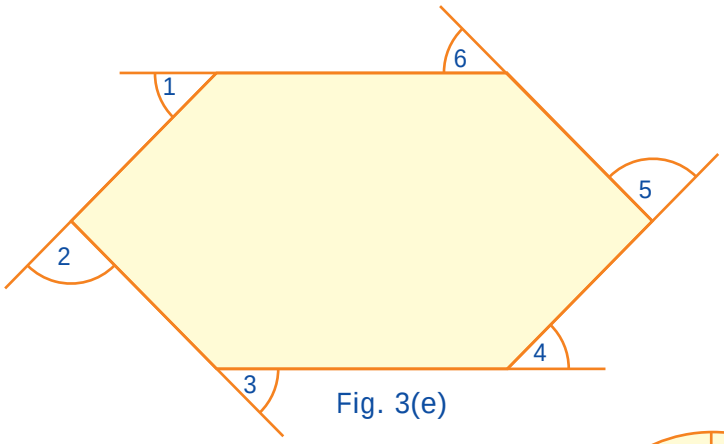

Fig. 3(e)

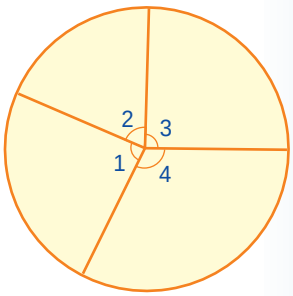

Fig. 3(f)

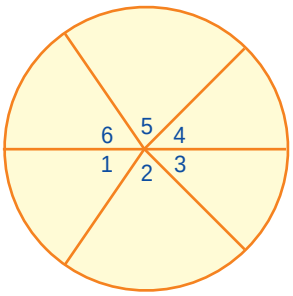

Fig. 3(h)

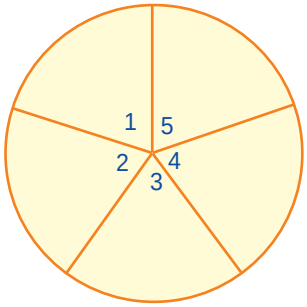

Fig. 3(g)

Observations :

1. The sum of exterior angles of a quadrilateral taken in an order is .....
2. The sum of exterior angles of a pentagon taken in an order is .....
3. The sum of exterior angles of a hexagon taken in an order is .....
4. The sum of exterior angles in each polygon taken in an order is .....