

CHAPTER 03

CONSTRUCTION OF QUADRILATERALS

Example:

In a quadrilateral ABCD, the angles A, B, C and D are in the ratio 1 : 2 : 3 : 4. Find the measure of each angel of the quadrilateral.

Sol.

We have,

$$\underline{A} : \underline{B} : \underline{C} : \underline{D} = 1 : 2 : 3 : 4$$

Let the angles be $\underline{A} = x^0$, $\underline{B} = 2x^0$, $\underline{C} = 3x^0$, $\underline{D} = 4x^0$

$$\therefore x^0 + 2x^0 + 3x^0 + 4x^0 = 360^0$$

($\because$ Angle sum property of quadrilateral)

$$\Rightarrow 10x^0 = 360^0$$

$$\Rightarrow x^0 = \frac{360^0}{10} = 36^0$$

Thus, the angles are

$$\underline{A} = x^0 = 36^0$$

$$\underline{B} = 2x^0 = 2 \times 36^0 = 72^0$$

$$\underline{C} = 3x^0 = 3 \times 36^0 = 108^0$$

$$\underline{D} = 4x^0 = 4 \times 36^0 = 144^0$$

Example:

Find the number of sides of a regular polygon whose each exterior angle is 18^0 .

Sol.

Sum of the exterior angles of a regular polygon = 360^0

One exterior angle is 18^0 (given).

$$\text{Number of exterior angles} = \frac{360^0}{18^0} = 20$$

Number of sides = Number of exterior angles

Hence, the number of sides of the polygon is 20.

