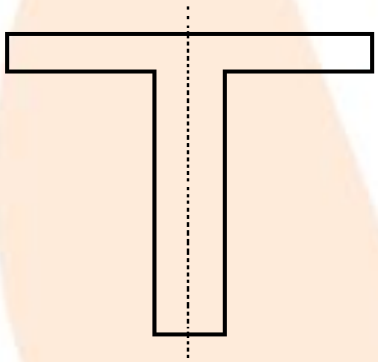
Revision Notes

Class-7 Mathematics

Chapter 14 – Symmetry

Line of Symmetry

- When a shape **coincides** with another shape completely then they are said to have **symmetry**.
- Symmetry can also be observed within a shape. When one part of a shape coincides with another part then they are said to have symmetry within a shape.
- The line which divides a shape into two identical parts is called a **line of symmetry.**
- For example: In the figure below the dotted line is the line of symmetry and left and right part looks identical or symmetrical



Lines of Symmetry for Regular polygon

- **Regular polygons** are those polygons whose **length of all sides** and **measure of angles** are **equal.**
- In regular polygons **lines of symmetry are equal to the sides** of regular polygons.
- For example:

a. Triangle has three sides and three lines of symmetry.
b. Square has four sides and four lines of symmetry.
c. Regular pentagon has five sides and five lines of symmetry.
d. Regular hexagon has six sides and six lines of symmetry.

Rotational symmetry

- When a shape is rotated at some angle about its axis clockwise or anticlockwise and after rotation if the shape looks exactly the same as it was before then it is called **rotational symmetry**.
- The fixed point through which the shape is rotated is called **centre of rotation.**
- The angle at which rotational symmetry occurs is called **angle of rotation.**
- The number of times a shape looks the same on rotation is called **order of rotational symmetry.**
  For example: Order of rotational symmetry of square is 4.

Line Symmetry and Rotational Symmetry

- There are some shapes which have line as well as rotational symmetry.
- Circle is the perfect example of this type; it has infinite line symmetry and can be rotated around its centre through any angle i.e., it has rotational symmetry at any angle.
- There are some alphabets also which show both line and rotational symmetry such as H, O, I and X.