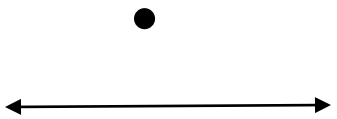
GEOMETRY- FUNDAMENTAL CONCEPTS

- **A point** is a mark of position, it is neither length nor width nor thickness. So it occupies no space.

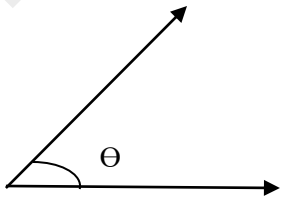


- **A line** has only length. It has neither width nor thickness. It has infinite length.

- **A line segment** is a part of a line whose both ends are fixed. It has definite length.

- **A ray** is a part of a line whose one end is fixed and the other end can be extended infinitely.

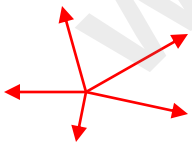
- **A plane** is a flat surface. It has length and width, but no thickness.
- **The space** is made up of everything which exists in the universe.Every surface etc is a part of space.
- **An angle** is formned when two line segments or two rays have common end point



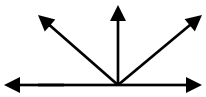
TYPES OF ANGLES

- **Acute Angle:** $0^0 < \theta \leq 90^0$
- **Right Angle:** $\theta = 90^0$
- **Obtuse Angle:** $90^0 < \theta \leq 180^0$
- **Straight Angle:** $\theta = 180^0$
- **Reflex Angle:** $180^0 < \theta \leq 360^0$

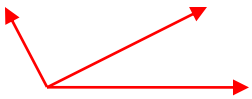
MORE ABOUT ANGLES



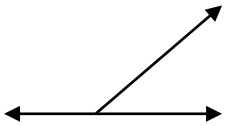
Angles on a Point



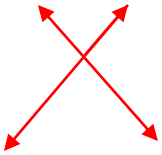
Angles on same side of straight line



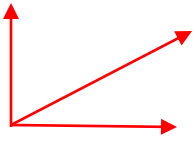
Adjacent angle



Supplementary angles



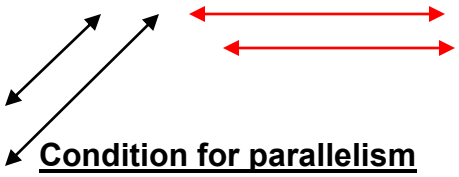
Vertically opposite angles



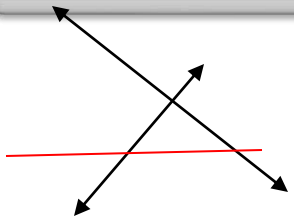
Complementary angles

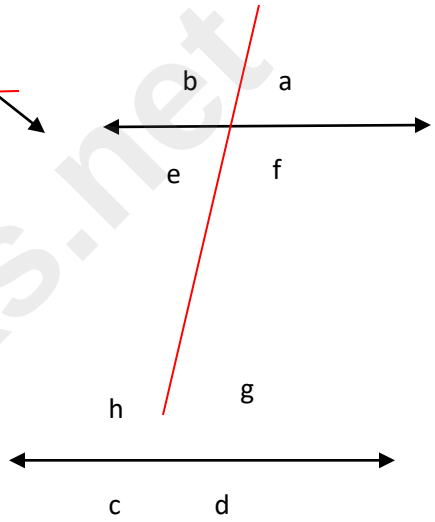
GEOMETRY- FUNDAMENTAL CONCEPTS

Parallel lines are straight lines which are coplanar and don not intersect each other even when produced on both sides.



Transversal is a straight line that cuts two or more co planar lines.





Condition for parallelism

- **Alternate angles are equal or**
  $\boldsymbol{Interior} :< \boldsymbol{e} =< \boldsymbol{g} ;< \boldsymbol{f} =< \boldsymbol{h}$ **and**
  $\boldsymbol{Exterior}: < \boldsymbol{b} =< \boldsymbol{d}; < \boldsymbol{a} =< \boldsymbol{c}$
- **Corresponding angles are equal or**
  $< \boldsymbol{a} =< \boldsymbol{g} ; < \boldsymbol{b} =< \boldsymbol{h}; < \boldsymbol{f} =< \boldsymbol{d}; < \boldsymbol{e} =< \boldsymbol{c}$
- **Co interior angles are supplementary**
  $< \boldsymbol{e} + < \boldsymbol{f} = \boldsymbol{180^0}; < \boldsymbol{h} + < \boldsymbol{g} = \boldsymbol{180^0};$