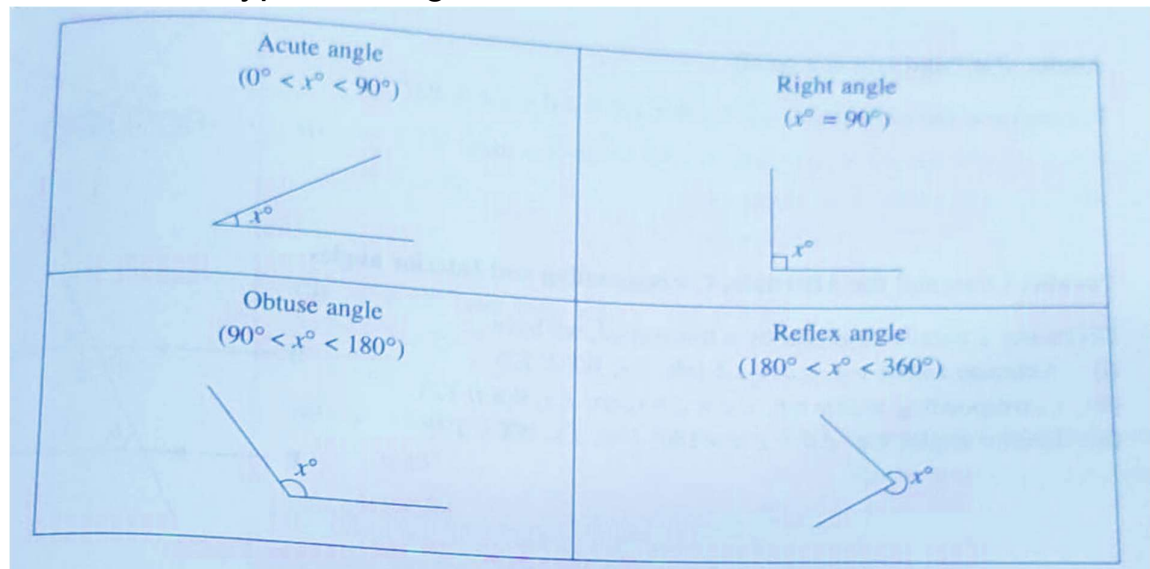


# Topic 10: Basic Geometry

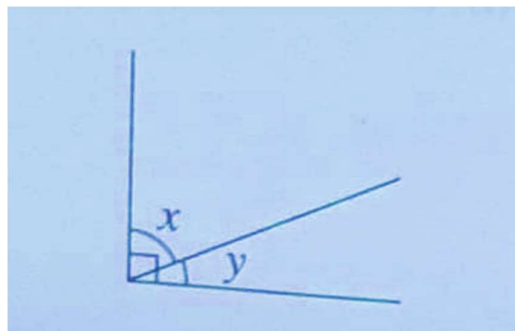
## Notes:

### Types of Angles and their Properties:

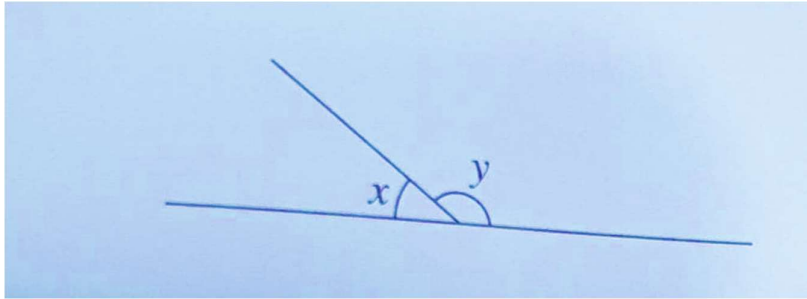
1. There are 4 types of angles:



2. Two angles  $\angle x$  and  $\angle y$  are said to be **complementary angles** if  $\angle x + \angle y = 90^\circ$ . They do not need to be next to each other.

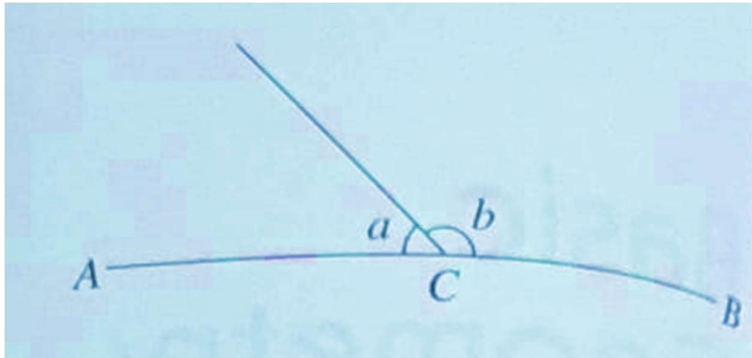


3. Two angles  $\angle x$  and  $\angle y$  are said to be **supplementary angles** if  $\angle x + \angle y = 180^\circ$ . They do not need to be next to each other.

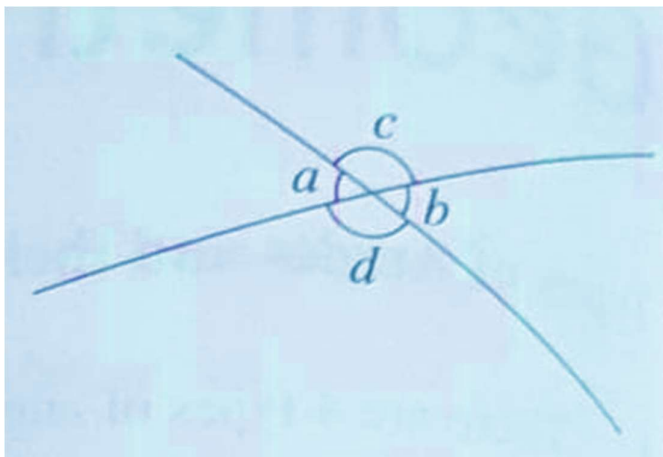


### Geometrical Properties of Angles:

4. **Adjacent angles on a straight line** (adj.  $\angle s$  on a str. line)  
If  $ACB$  is a straight line, then  $\angle a + \angle b = 180^\circ$ .

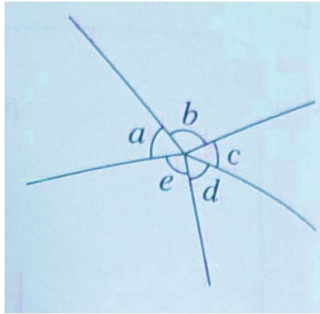


5. **Vertically opposite angles** (vert. opp.  $\angle s$ )  
For any 2 intersecting straight lines,  $\angle a = \angle b$  and  $\angle c = \angle d$ .

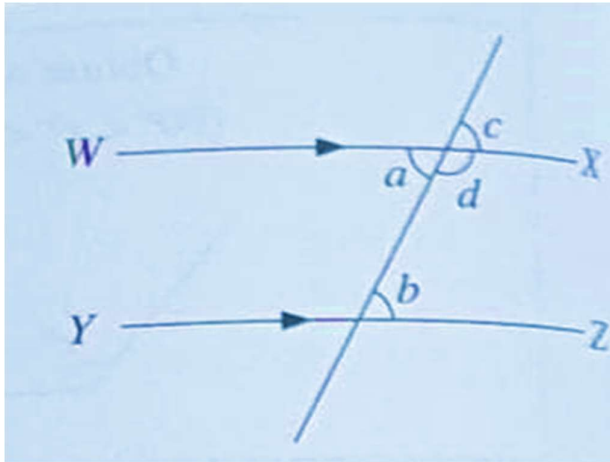


## 6. Angles at a Point ( $\angle s$ at a point)

For angles at the same point,  $\angle a + \angle b + \angle c + \angle d + \angle e = 360^\circ$ .



## 7. Parallel Lines and the Alternate, Corresponding and Interior angles:



Given any 2 parallel lines cut by a transversal, we have:

- Alternate angles e.g.  $\angle a = \angle b$  (alt.  $\angle s$ ,  $WX \parallel YZ$ )
- Corresponding angles e.g.  $\angle c = \angle b$  (corr.  $\angle s$ ,  $WX \parallel YZ$ )
- Interior angles e.g.  $\angle b + \angle d = 180^\circ$  (int.  $\angle s$ ,  $WX \parallel YZ$ )

Note:

- A transversal is any line that cuts 2 lines.
- Conversely, we can use either **(a)**, **(b)** or **(c)** to prove 2 lines are parallel.