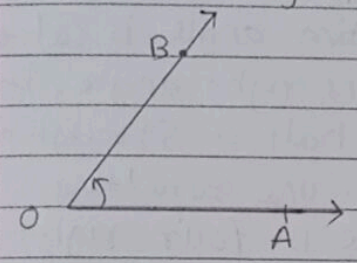
1. Angles and its Measurement.

Creative Math Marathi

* Directed angles:-



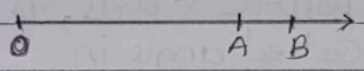
The oreder pairs of rays $(\overrightarrow{OA}, \overrightarrow{OB})$ together with the rotation of the ray OA to the position of the ray OB is called the 'directed angle $\angle AOB$

→ If the rotation of the initial ray is anticlockwise then the measure of directed angle is positive

→ If it is clockwise then the measure of directed angle is negative

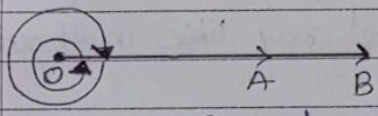
→ In the order pair $(\overrightarrow{OA}, \overrightarrow{OB})$, the ray OA is called the initial arm and the ray OB is called the terminal arm.

*Zero angle:-



If the OA hay zero rotation, that is does not rotate, the initial arm itself is a terminal arm OB, the angle so formed is zero angle.

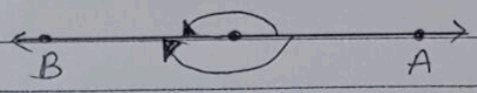
* One rotation angle:



After one complete rotation if the initial ray OA coincides with the terminal ray OB then so formed angle is knaw as one rotation angle

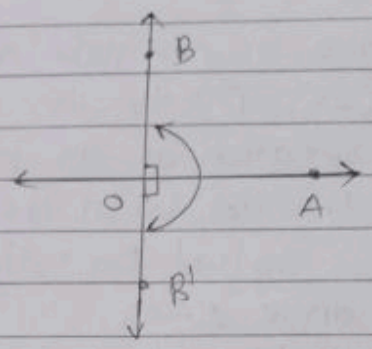
$m\angle AOB = 360°$

* Straight angle:



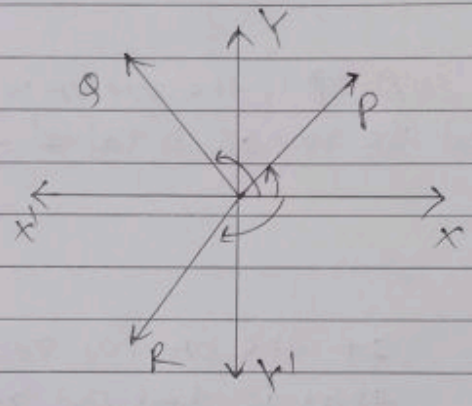
After the rotation, if the initial ray OA and the terminal ray OB ax in the opposite directions then directed angle so form is knaw as straight angle.

Right angle:



one fourth of one rotation angle is called as one right angle, its also half a straight line. one rotation angle is four right angles.

Angles in standard position -



In rectangular co-ordinate system, a directed angle with its vertex at origin O and the initial ray along the positive X axis, is called angle in standard position.

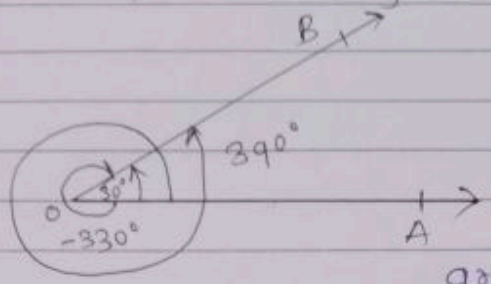
* Angle in a quadrant -

A directed angle in standard position is said to be in a particular quadrant if its terminal ray like in that quadrant.

* quadrantal angles -

A directed angle in standard position whose terminal ray lies along X axis or Y axis is called quadrantal angle.

* Co-terminal angles -



Directed angles of different amount of rotation having the same position of, initial rays and terminal rays are called 'co-terminal angles'.

→ If two directed angles are co-terminal angles then diff. between measure of these two directed angles is an integral multiple of 360°.

* Measure of angles:

The Amount of rotation from the initial ray OA to the terminal ray OB gives the measure of angle OAB.

→ It is measured in two systems.

* Degree measure

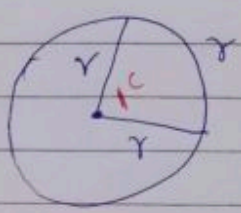
* $1° = 60'$ also $1° = \left(\frac{\pi}{180}\right)^c$

$1' = 60''$

"one rotation angle is divided into 360 equal parts, the measure of each part is called as one degree angle."

* Radian Measure -

One radian is the measure of an angle subtended at the centre of a circle by an arc whose length is equal to the radius of the circle



$1^c = \left(\frac{180}{\pi}\right)^\circ$