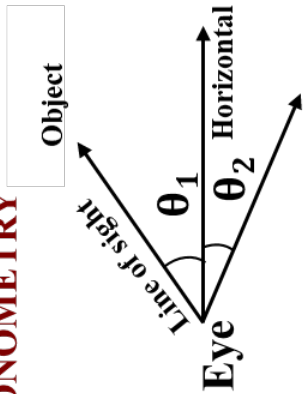


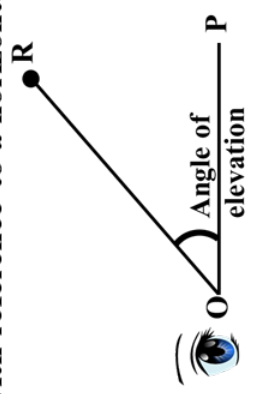
SOME APPLICATIONS OF TRIGONOMETRY



- (i) The line of sight is the line drawn from the eye of an observer to the point in the object viewed by the observer.
- (ii) The angle of elevation θ_1 :angle formed by the line of sight with the horizontal when it is above the horizontal level
- (iii) The angle of depression θ_2 :angle Formed by the line of sight with the horizontal when it is below the horizontal level

Note:

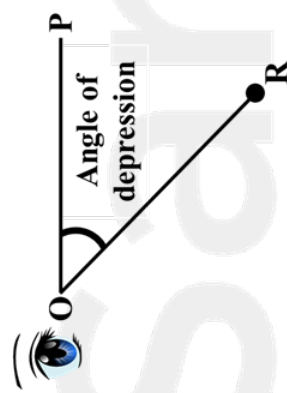
- (1) The angle of elevation as well as angle of depression are measured with reference to a horizontal line.



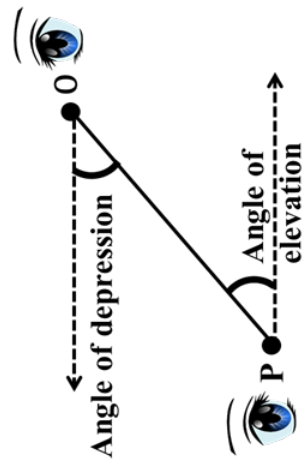
MIND MAP

SOME APPLICATIONS OF TRIGONOMETRY

- (1) The angle of elevation as well as angle of depression are measured with reference to horizontal line.



- (2) All objects such as towers, trees, mountains etc. shall be considered as linear for mathematical convenience.
- (3) The height of the observer, is neglected, if it is not given in the problem.
- (4) Angle of depression of P as seen from O is equal to the angle of elevation of O, as seen from P.
i.e., $\angle AOP = \angle OPX$



- (5) The angle of elevation increases as the object moves towards the right of the line of sight.
- (6) The angle of depression decreases as the object moves towards the left of the line of sight.

Trigonometric Ratios of specific angles

Ratio	Angle θ	0°	30°	45°	60°	90°
$\sin \theta$		0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
$\cos \theta$		1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
$\tan \theta$		0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	N.D.
$\cot \theta$		N.D.	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0
$\sec \theta$		1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	N.D.
$\operatorname{cosec} \theta$		N.D.	2	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	1