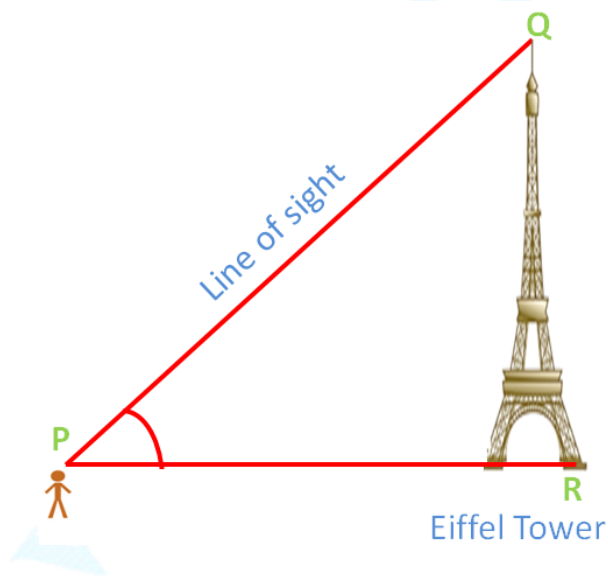# SOME APPLICATION OF TRIGONOMETRY

Trigonometry has many applications. Some of them were being used since ancient times. Some of the applications of trigonometry are:

- used in astronomy in finding distances of stars and planets from the earth.
- used in geography and in navigation.
- used in constructing maps.
- determining the position of an island in relation to longitudes and latitudes.

In this chapter, we will observe how trigonometry is used to find the heights or lengths of various objects or the distance between two distinct objects by observing the angles that are subtended by those objects at the eye of the observer, without actually measuring them.

1. Line of Sight

Line of sight is a line drawn from the eye of an observer to the point in the object viewed by the observer. Imagine a person is standing on the ground and staring at the top of the Eiffel tower.
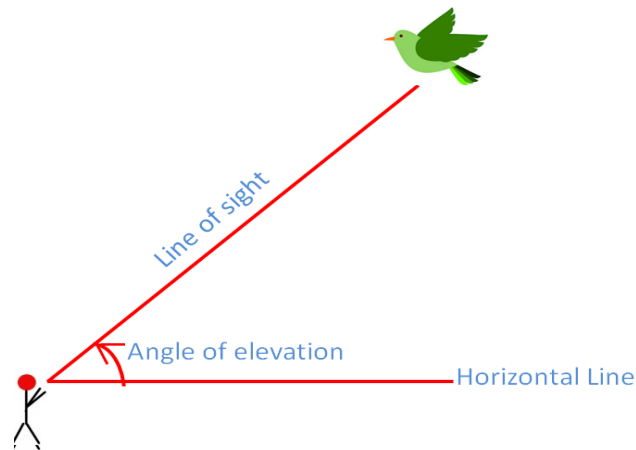

The line PQ drawn from the eye of the observer to the top of the Eiffel tower is called the line of sight.

SOME APPLICATION OF TRIGONOMETRY
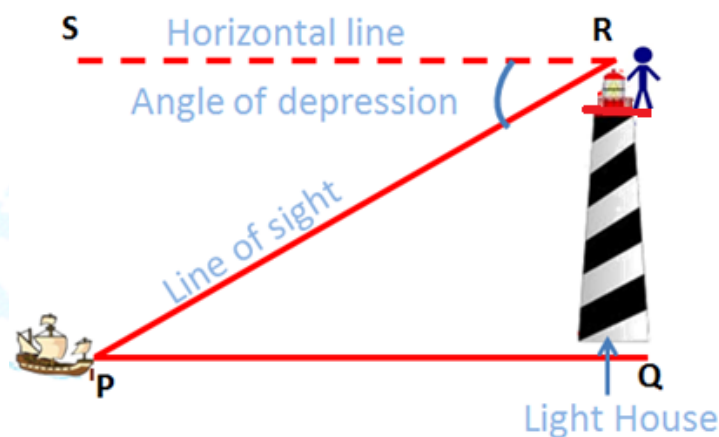
2. Angle of elevation

The angle of elevation of the point viewed is the angle formed by the line of sight with the Horizontal line when the point being viewed is above the horizontal line or level. (i.e. When we raise our head to look at the object)

Since, the bird is above the horizontal line or level, observer raise his eyes to look at the bird due to which the line of sight is moved upwards to form an angle.

3. Angle of depression

The angle of depression of a point on the object being viewed is the angle formed by the line of sight with the horizontal when the object is below the horizontal line or level. Consider an observer is standing in the lighthouse and monitoring a ship sailing in the sea.

In this case, RS is the horizontal line and PR is the line of sight and the angle formed by these two lines i.e. $\angle SRP$ is the angle of depression.