

APPLICATION OF TRIGONOMETRY - HAND OUT.

The height and length of an object or the distance between two objects can be determined with the help of trigonometric concepts.

The line of sight is the line drawn from the eye of an observer to the point of the object viewed by the observer.

The angle of elevation of an object viewed, is the angle formed by the line of sight with the horizontal when object viewed is above the horizontal level. ie., when the case when we raise our head to look at the object.

The angle of depression of an object viewed, is the angle formed by the line of sight with the horizontal when object viewed is below the horizontal level, ie., the case when we lower our head to look at the object.

Points to remember:

- In solving problems observer is represented by a point if his height is not given.
- In solving problems object is represented by a line segment and sometimes by a point if height and length is not considered.
- A line drawn parallel to earth surface is called the horizontal line.
- The angle of elevation of a point C as seen from a

point A is always equal to the angle of depression of A as seen from C.

- The angles of elevation and depression are always acute angles.
- If the observer moves towards the objects like tower, building, cliff, etc. , then the angle of elevation increases and if the observer moves away from the object, the angle of elevation decreases.
- If the angle of elevation of sun decreases, then the length of the shadow of an object increases and vice-versa.
- If in problems , the angle of elevation of an object is given, then we conclude that the object is at higher altitude than the observer. The angle of depression implies that observer is at higher altitude than the object.
- If angle of elevation of two buildings are given , then the building with a greater angle will be taller.

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