KALYAN ACADEMY

BHARATH NAGAR, HYD-18
APPLICATIONS OF TRIGONOMETRY | CLASS X | WORKSHEET-2

1. A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground making an angle 30^0 with it. The distance between the foot of the tree to the point where the top touches the ground is 8m. Find the height of the tree?

2. The shadow of a tower standing on a level plane is found to be 50m longer when sun's elevation is 30^0 then when it is 60^0. Find the height of the tower?

3. The angle of depression of the top and bottom of a tower as seen from the top of a 100m high cliff are 30^0 and 60^0 respectively. Find the height of the tower?

4. From a window 9m above ground of a house in a street, the angles of elevation and depression of the top and foot of another house on the opposite side of the street are 30^0 and 60^0 respectively. Find the height of the opposite house and width of the street?

5. From the top of a hill, the angle of depression of two consecutive kilometer stones due east are found to be 30^0 and 45^0. Find the height of the hill?

6. Two poles of equal heights are standing opposite each other on either side of the road ,which is 80m wide . From a point between them on the road the angles of elevation of the top of the poles are 60◦ and 30◦. Find the heights of pole and the distance of the point from the poles?

7. A window in a building is at a height of 10m above the ground . The angle of depression of a point P on the ground from the window is 30^0 . The angle of elevation of the top of the building from the point P is 60^0 . Find the height of the building?

8. A man on the deck on a ship 14m above water level , observes that the angle of elevation of the top of a cliff is 60^0 and the angle of depression of the base of the cliff is 30^0 . Calculate the distance of the cliff from the ship and the height of the cliff?

9. From the top of a building 60m high , the angels of depression of the top and botton of a vertical lamp post are observed to be 30° and 60°respectively. Find (i) horizontal distance between the building and the lamp post (ii) height of the lamp post?

10. The angle of elevation of a cloud from a point 60m above a lake is 30° and the angle of depression of the reflection of the cloud in the lake is 60° . Find the height of the cloud from the surface of the lake?

11. A 1.6m tall girl stands at a distance of 3.2 m from a lamp post and cast a shadow of 4.8 m on the ground. Find the height of the lamp post?

12. An observer, 1.5m tall, is 28.5 m away from a tower 30m high. Determine the angle of elevation of the top of the tower from his eye?

13. The angles of depression of two ships from the top of light house and on the same side of it are found to be 45° and 30° respectively. Find the heighjt of the light house?

14. Two men either side of the cliff 80m observes the angles of elevation of the top of the cliff by 30° and 60° respectively. Find the distance between the two men?

15. A 1.5m tall boy is standing at some distance from a 30m tall building. The angle of elevation of the ferom his eyes to the top of the building increases from 30° to 60° as he walks towards the building. Find the distance he walked towards the building?