EduSahara™ Assignment

Name : Heights and Distances - 2

Chapter : Heights and Distances

Grade : ICSE Grade X

1. From a point 130 m away from a vertical cliff, the angles of elevation of the top and the foot of a vertical pillar at the top of the cliff are 60° and 30° respectively. Find the height of the cliff.

   (i) 72.06 m (ii) 70.06 m (iii) 75.06 m (iv) 80.06 m (v) 78.06 m

2. From a point 100 m away from a vertical cliff, the angles of elevation of the top and the foot of a vertical pillar at the top of the cliff are 60° and 30° respectively. Find the height of the pillar.

   (i) 115.47 m (ii) 122.47 m (iii) 99.47 m (iv) 90.47 m (v) 137.47 m

3. The angles of depression of two boats from the top of a cliff 150 m high are 45° and 60° respectively. Find the distance between the boats, if the boats are on the same side of the cliff .

   (i) 58.39 m (ii) 60.39 m (iii) 63.39 m (iv) 68.39 m (v) 66.39 m

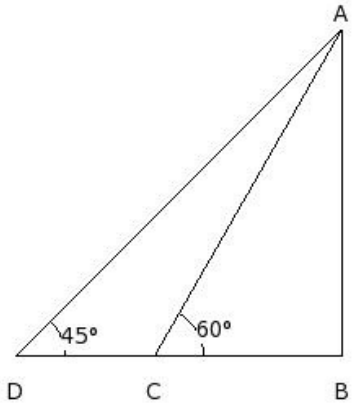
4. The angles of depression of two boats from the top of a cliff 120 m high are 60° and 30° respectively. Find the distance between the boats, if the boats are on the opposite sides of the cliff .

   (i) 251.14 m (ii) 285.14 m (iii) 275.14 m (iv) 304.14 m (v) 277.14 m

5. A man on the top of a vertical observation tower observes a car moving at a uniform speed coming directly towards him. If it takes 15 min for the angle of depression to change from 30° to 45°, how soon after this, will the car reach the observation tower?

   (i) 23 min 32 sec (ii) 21 min 30 sec (iii) 19 min 28 sec (iv) 20 min 29 sec (v) 18 min 26 sec

6. The shadow of a vertical tower BA on a level ground is increased by 20 m, when the altitude of the sun changes from 60° to 45°. Find the height of the tower .



   (i) 44.32 m (ii) 47.32 m (iii) 42.32 m (iv) 52.32 m (v) 50.32 m

7. A boy standing on a vertical cliff in a jungle observes two rest houses in line with him on opposite sides deep in the jungle below. If their angles of depression are 60° and 45° and the distance between them is 155 m , find the height of the cliff.

   (i) 95.27 m (ii) 101.27 m (iii) 93.27 m (iv) 98.27 m (v) 103.27 m

8. A man in a boat rowing away from a lighthouse 45 m high, takes 3.5 min to change the angle of elevation of the top of the lighthouse from 60° to 45°. Find the speed of the boat.

   (i) 8.09 m/sec (ii) 0.09 m/sec (iii) 7.09 m/sec (iv) 2.09 m/sec (v) 1.09 m/sec

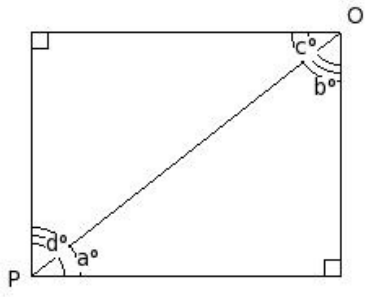
9. A man 1.3 m tall stands at a distance of 2.3 m from a lamp post and casts a shadow of 9.1 m on the ground. Find the height of the lamp post .

(i) 2.63 m (ii) 3.63 m (iii) 9.63 m (iv) 0.63 m (v) 1.63 m

10. Two vertical poles are on either side of a road. A 22 m long ladder is placed between the two poles. When the ladder rests against one pole, it makes an angle of 30° with the pole and when it is turned to rest against another pole, it makes an angle of 60° with the road. Find the width of the road.

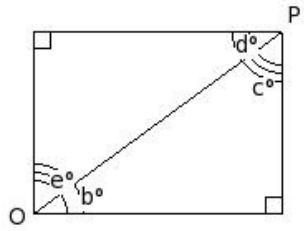
(i) 33.05 m (ii) 35.05 m (iii) 30.05 m (iv) 27.05 m (v) 25.05 m

11. If P is the point of observation and the observed object is at point O, which of the following angles represent the angle of elevation ?



(i) ∠c (ii) ∠a (iii) ∠b (iv) ∠d

12. If P is the point of observation and the observed object is at point O, which of the following angles represent the angle of depression ?



(i) ∠c (ii) ∠d (iii) ∠b (iv) ∠e

Assignment Key

1) (iii)	2) (i)	3) (iii)	4) (v)	5) (iv)	6) (ii)
7) (iv)	8) (ii)	9) (v)	10) (iii)	11) (ii)	12) (ii)