EduSahara™ Assignment

Name : Heights and Distances - 2

Chapter : Some Applications of Trigonometry

Grade : CBSE Grade X

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1. From a point 120 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) 69.29 m (ii) 64.29 m (iii) 74.29 m (iv) 66.29 m (v) 72.29 m

2. From a point 150 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 45° and 30° respectively. Find the height of the pillar.

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

3. The angles of depression of two boats from the top of a cliff 120 m high are 45° and 30° respectively. Find the distance between the boats, if the boats are on the same side of the cliff .

(i) 82.85 m (ii) 84.85 m (iii) 90.85 m (iv) 92.85 m (v) 87.85 m

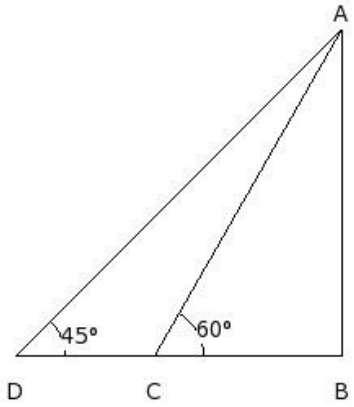
4. The angles of depression of two boats from the top of a cliff 120 m high are 45° and 60° respectively. Find the distance between the boats, if the boats are on the opposite sides of the cliff .

(i) 176.29 m (ii) 167.29 m (iii) 189.29 m (iv) 206.29 m (v) 213.29 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 9 min for the angle of depression to change from 30° to 60°, how soon after this, will the car reach the observation tower?

(i) 5 min 31 sec (ii) 2 min 27 sec (iii) 4 min 30 sec (iv) 3 min 29 sec (v) 7 min 32 sec

6. The shadow of a vertical tower BA on a level ground is increased by 25 m, when the altitude of the sun changes from 60° to 45°. Find the height of the tower .



(i) 56.15 m (ii) 64.15 m (iii) 62.15 m (iv) 59.15 m (v) 54.15 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 30° and the distance between them is 145 m , find the height of the cliff.

(i) 65.79 m (ii) 57.79 m (iii) 59.79 m (iv) 62.79 m (v) 67.79 m

8. A man in a boat rowing away from a lighthouse 35 m high, takes 3 min to change the angle of elevation of the top of the lighthouse from 60° to 30°. Find the speed of the boat.

(i) 0.22 m/sec (ii) 2.22 m/sec (iii) 8.22 m/sec (iv) 7.22 m/sec (v) 1.22 m/sec

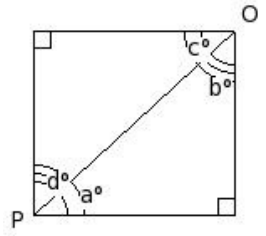
9. A man 1.3 m tall stands at a distance of 9.4 m from a lamp post and casts a shadow of 4.3 m on the ground. Find the height of the lamp post .

(i) 2.14 m (ii) 6.14 m (iii) 4.14 m (iv) 3.14 m (v) 5.14 m

10. Two vertical poles are on either side of a road. A 34 m long ladder is placed between the two poles. When the ladder rests against one pole, it makes an angle of 45° with the pole and when it is turned to rest against another pole, it makes an angle of 30° with the road. Find the width of the road.

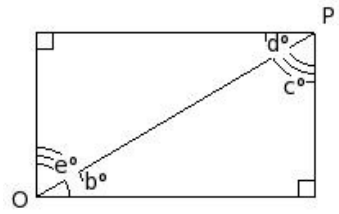
(i) 56.49 m (ii) 48.49 m (iii) 58.49 m (iv) 50.49 m (v) 53.49 m

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) ∠d (ii) ∠b (iii) ∠c (iv) ∠a

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) ∠e (ii) ∠d (iii) ∠c (iv) ∠b

Assignment Key

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

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