



1. From a point 80 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  $45^\circ$  and  $30^\circ$  respectively. Find the height of the cliff.

- (i) 41.19 m (ii) 49.19 m (iii) 43.19 m (iv) 46.19 m (v) 51.19 m

2. From a point 90 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  $60^\circ$  and  $45^\circ$  respectively. Find the height of the pillar.

- (i) 62.89 m (ii) 65.89 m (iii) 60.89 m (iv) 68.89 m (v) 70.89 m

3. The angles of depression of two boats from the top of a cliff 70 m high are  $45^\circ$  and  $30^\circ$  respectively. Find the distance between the boats, if the boats are on the same side of the cliff .

- (i) 56.25 m (ii) 51.25 m (iii) 46.25 m (iv) 48.25 m (v) 54.25 m

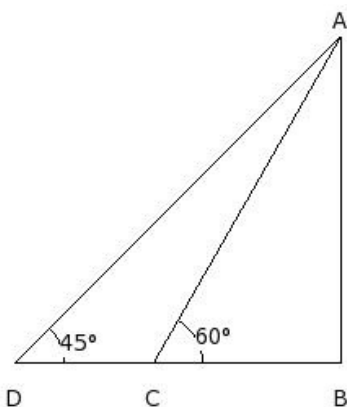
4. The angles of depression of two boats from the top of a cliff 160 m high are  $30^\circ$  and  $45^\circ$  respectively. Find the distance between the boats, if the boats are on the opposite sides of the cliff .

- (i) 413.14 m (ii) 455.14 m (iii) 437.14 m (iv) 454.14 m (v) 432.14 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 20 min for the angle of depression to change from  $30^\circ$  to  $60^\circ$ , how soon after this, will the car reach the observation tower?

- (i) 7 min 2 sec (ii) 10 min 0 sec (iii) 11 min 6 sec (iv) 9 min 4 sec (v) 12 min 8 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  $60^\circ$  to  $45^\circ$ . Find the height of the tower .



- (i) 54.15 m (ii) 59.15 m (iii) 64.15 m (iv) 56.15 m (v) 62.15 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  $30^\circ$  and  $45^\circ$  and the distance between them is 120 m , find the height of the cliff.

- (i) 48.93 m (ii) 40.93 m (iii) 38.93 m (iv) 46.93 m (v) 43.93 m

8. A man in a boat rowing away from a lighthouse 85 m high, takes 0.5 min to change the angle of elevation of the top of the lighthouse from  $60^\circ$  to  $30^\circ$ . Find the speed of the boat.

- (i) 5.27 m/sec (ii) 4.27 m/sec (iii) 2.27 m/sec (iv) 3.27 m/sec (v) 1.27 m/sec

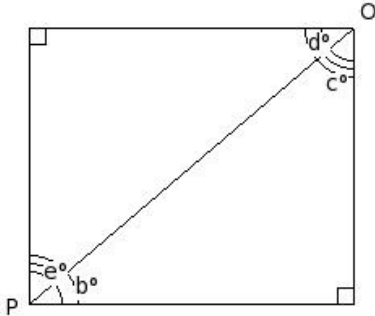
9. A man 1.7 m tall stands at a distance of 5.6 m from a lamp post and casts a shadow of 8.4 m on the ground. Find the height of the lamp post .

(i) 1.83 m (ii) 0.83 m (iii) 3.83 m (iv) 4.83 m (v) 2.83 m

10. Two vertical poles are on either side of a road. A 31 m long ladder is placed between the two poles. When the ladder rests against one pole, it makes an angle of  $60^\circ$  with the pole and when it is turned to rest against another pole, it makes an angle of  $30^\circ$  with the road. Find the width of the road.

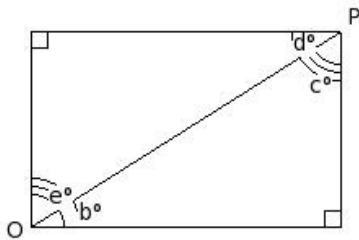
(i) 37.35 m (ii) 45.35 m (iii) 42.35 m (iv) 39.35 m (v) 47.35 m

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)  $\angle d$  (ii)  $\angle e$  (iii)  $\angle b$  (iv)  $\angle c$

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)  $\angle d$  (ii)  $\angle c$  (iii)  $\angle b$  (iv)  $\angle e$

## Assignment Key

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