



1. From a point 180 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 cliff.  
(i) 173.00 m (ii) 180.00 m (iii) 192.00 m (iv) 158.00 m (v) 194.00 m

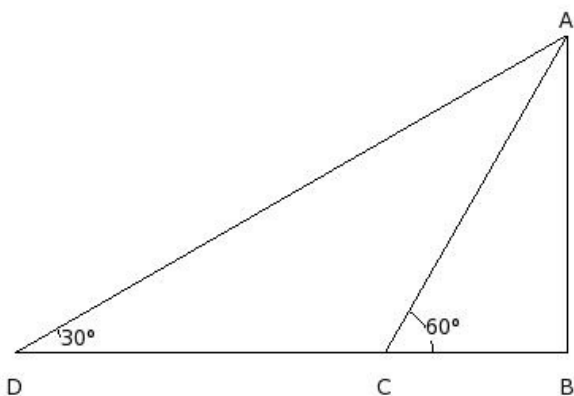
2. From a point 170 m away from a vertical cliff, the angles of elevation of the top and the foot of a vertical pillar at the top of the cliff are  $45^\circ$  and  $30^\circ$  respectively. Find the height of the pillar.  
(i) 71.84 m (ii) 66.84 m (iii) 68.84 m (iv) 74.84 m (v) 76.84 m

3. The angles of depression of two boats from the top of a cliff 70 m high are  $30^\circ$  and  $60^\circ$  respectively. Find the distance between the boats, if the boats are on the same side of the cliff .  
(i) 77.83 m (ii) 80.83 m (iii) 85.83 m (iv) 83.83 m (v) 75.83 m

4. The angles of depression of two boats from the top of a cliff 50 m high are  $30^\circ$  and  $60^\circ$  respectively. Find the distance between the boats, if the boats are on the opposite sides of the cliff .  
(i) 117.48 m (ii) 88.48 m (iii) 115.48 m (iv) 137.48 m (v) 111.48 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 6 min for the angle of depression to change from  $30^\circ$  to  $45^\circ$ , how soon after this, will the car reach the observation tower?  
(i) 10 min 14 sec (ii) 7 min 11 sec (iii) 8 min 12 sec (iv) 6 min 9 sec (v) 9 min 13 sec

6. The shadow of a vertical tower BA on a level ground is increased by 35 m, when the altitude of the sun changes from  $60^\circ$  to  $30^\circ$ . Find the height of the tower .



- (i) 33.31 m (ii) 27.31 m (iii) 30.31 m (iv) 35.31 m (v) 25.31 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  $60^\circ$  and  $45^\circ$  and the distance between them is 195 m , find the height of the cliff.  
(i) 139.63 m (ii) 135.63 m (iii) 123.63 m (iv) 106.63 m

8. A man in a boat rowing away from a lighthouse 100 m high, takes 0.5 min to change the angle of elevation of the top of the lighthouse from  $60^\circ$  to  $45^\circ$ . Find the speed of the boat.  
(i) 1.41 m/sec (ii) 2.41 m/sec (iii) 3.41 m/sec (iv) 0.41 m/sec (v) 9.41 m/sec

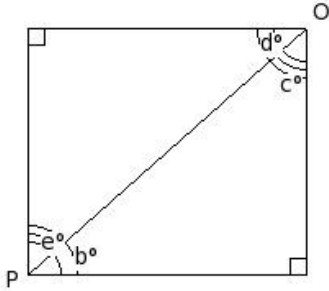
9. A man 1.6 m tall stands at a distance of 1.7 m from a lamp post and casts a shadow of 6.8 m on the ground. Find the height of the lamp post .

(i) 3.00 m (ii) 2.00 m (iii) 4.00 m (iv) 1.00 m (v) 0.00 m

10. Two vertical poles are on either side of a road. A 26 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  $45^\circ$  with the road. Find the width of the road.

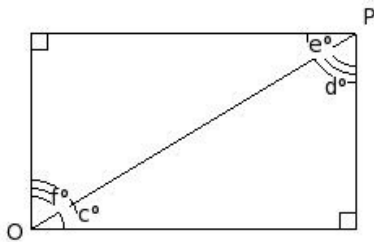
(i) 28.38 m (ii) 31.38 m (iii) 34.38 m (iv) 36.38 m (v) 26.38 m

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

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)  $\angle f$  (iii)  $\angle c$  (iv)  $\angle e$

## Assignment Key

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1) (ii)

2) (i)

3) (ii)

4) (iii)

5) (iii)

6) (iii)

7) (iii)

8) (i)

9) (ii)

10) (ii)

11) (ii)

12) (iv)