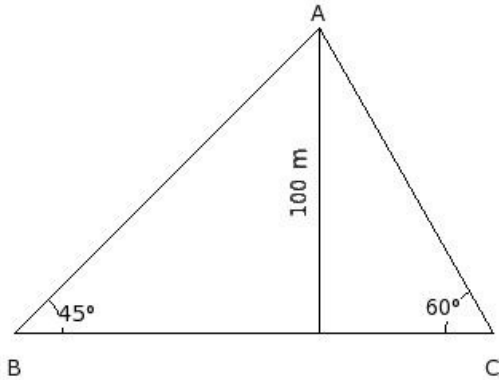


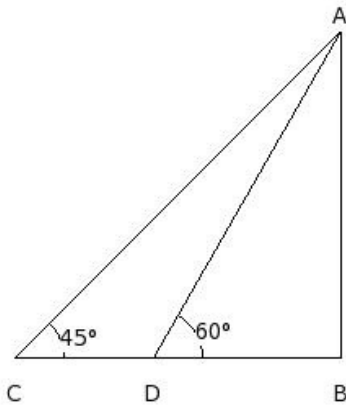


1. Two boys are on opposite sides of a tower of 100 m height. They measure the angle of elevation of the top of the tower as 45° and 60° respectively. Find the distance between the two boys.



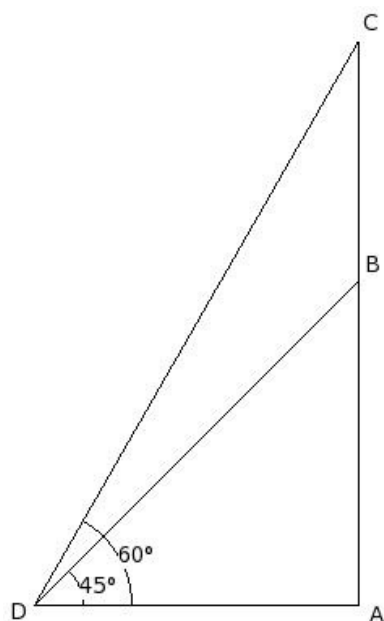
- (i) $(100\sqrt{6} + \frac{100}{3}\sqrt{18})$ m (ii) $(2 + \sqrt{3})$ m (iii) $\frac{20000}{3}$ m (iv) $(100 + \frac{100}{3}\sqrt{3})$ m (v) $(50\sqrt{6} + 50\sqrt{2})$ m

2. A person, walking 20 m from a point toward a flagpost, observes that its angle of elevation changes from 45° to 60° . Find the height of the flagpost.



- (i) $(30\sqrt{6} + 10\sqrt{18})$ m (ii) $(15\sqrt{6} + 15\sqrt{2})$ m (iii) 600 m (iv) $(30 + 10\sqrt{3})$ m (v) $(2 + \sqrt{3})$ m

- A flagstaff stands on the top of a building at a distance of 30 m away from the foot of building . The angle of elevation of the top of the flagstaff is 60° and the angle of elevation of the top of the building is 45° . Find the height of the flagstaff .



- (i) $(30\sqrt{18}-30\sqrt{6})$ m (ii) $(30\sqrt{3}-30)$ m (iii) 1800 m (iv) $(45\sqrt{2}-15\sqrt{6})$ m (v) $(2-\sqrt{3})$ m

- There are two temples one on each bank of a river, just opposite to each other. One of the temples is 160 m high.
4. As observed from the top of this temple, the angles of depression of the top and foot of the other temple are 30° and 45° respectively. Find the width of the river .

- (i) 172.00 m (ii) 174.00 m (iii) 145.00 m (iv) 154.00 m (v) 160.00 m

- There are two temples one on each bank of a river, just opposite to each other. One of the temples is 50 m high.
5. As observed from the top of this temple, the angles of depression of the top and foot of the other temple are 30° and 60° respectively. Find the height of the other temple.

- (i) 36.33 m (ii) 33.33 m (iii) 38.33 m (iv) 30.33 m (v) 28.33 m

- Two poles of equal height are standing opposite to each other on either side of a road which is 35 m wide. From a point between them on the road, the angles of elevation of the top of the poles are 45° and 60° respectively. Find the height of each pole and the distances of the point from the two poles .

- (i) height = 22.19 m, distances away = 12.81 m, 22.19 m
(ii) height = 24.19 m, distances away = 14.81 m, 24.19 m
(iii) height = 23.19 m, distances away = 13.81 m, 23.19 m
(iv) height = 21.19 m, distances away = 11.81 m, 21.19 m
(v) height = 20.19 m, distances away = 10.81 m, 20.19 m

- From the top of a light house which is 45 m high from the sea level, the angles of depression of two ships are 60° and 30° . If one ship is exactly behind the other on the same side of the light house , find the distance between the two ships.

- (i) 46.96 m (ii) 48.96 m (iii) 56.96 m (iv) 54.96 m (v) 51.96 m

8. From the top of a 17 m high building , the angle of elevation of the top of a cable tower is 60° and the angle of depression of its foot is 30° . Find the height of the cable tower.

- (i) 71.00 m (ii) 63.00 m (iii) 73.00 m (iv) 65.00 m (v) 68.00 m

9. The angle of elevation of the top of a building from the foot of a tower is 60° . The angle of elevation of the top of the tower from the foot of the building is 30° . If the height of the tower is 50 m, find the height of the building .

(i) 171.99 m (ii) 149.99 m (iii) 163.99 m (iv) 145.99 m (v) 132.99 m

10. A flag is hoisted at the top of a building . From a point on the ground, the angle of elevation of the top of the flag staff is 45° and the angle of elevation of the top of the building is 30° . If the height of the building is 10 m, find the height of the flag staff .

(i) 5.32 m (ii) 7.32 m (iii) 8.32 m (iv) 9.32 m (v) 6.32 m

11. A flag is hoisted at the top of a building . From a point on the ground, the angle of elevation of the top of the flag staff is 60° and the angle of elevation of the top of the building is 30° . If the height of the flag staff is 10 m, find the height of the building .

(i) 4.00 m (ii) 5.00 m (iii) 7.00 m (iv) 3.00 m (v) 6.00 m

12. From a point 200 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 45° respectively. Find the height of the cliff.

(i) 200.00 m (ii) 203.00 m (iii) 186.00 m (iv) 212.00 m

13. 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 60° and 45° respectively. Find the height of the pillar.

(i) 109.82 m (ii) 95.82 m (iii) 136.82 m (iv) 117.82 m (v) 94.82 m

14. The angles of depression of two boats from the top of a cliff 60 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) 43.93 m (ii) 40.93 m (iii) 38.93 m (iv) 46.93 m (v) 48.93 m

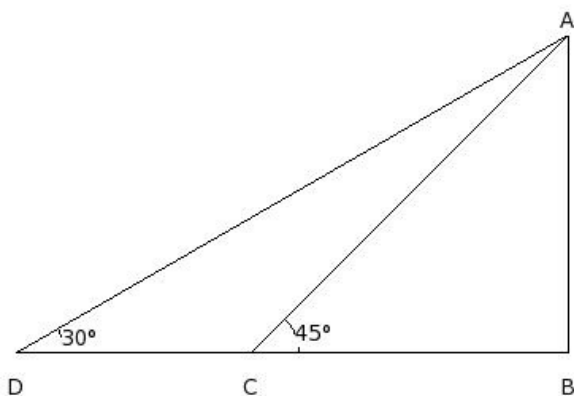
15. The angles of depression of two boats from the top of a cliff 70 m high are 30° and 45° respectively. Find the distance between the boats, if the boats are on the opposite sides of the cliff .

(i) 198.25 m (ii) 177.25 m (iii) 183.25 m (iv) 206.25 m (v) 191.25 m

16. 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 12 min for the angle of depression to change from 30° to 60° , how soon after this, will the car reach the observation tower?

(i) 3 min 2 sec (ii) 7 min 6 sec (iii) 6 min 0 sec (iv) 5 min 4 sec (v) 8 min 7 sec

17. The shadow of a vertical tower BA on a level ground is increased by 25 m, when the altitude of the sun changes from 45° to 30° . Find the height of the tower .



(i) 34.16 m (ii) 31.16 m (iii) 29.16 m (iv) 37.16 m (v) 39.16 m

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 245 m, find the height of the cliff.

(i) 93.10 m (ii) 111.10 m (iii) 130.10 m (iv) 99.10 m (v) 106.10 m

19. A man in a boat rowing away from a lighthouse 70 m high, takes 5 min to change the angle of elevation of the top of the lighthouse from 45° to 30° . Find the speed of the boat.

(i) 0.17 m/sec (ii) 7.17 m/sec (iii) 8.17 m/sec (iv) 1.17 m/sec (v) 2.17 m/sec

20. Two vertical poles are on either side of a road. A 23 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 60° with the road. Find the width of the road.

(i) 24.76 m (ii) 32.76 m (iii) 30.76 m (iv) 27.76 m (v) 22.76 m

Assignment Key

1) (iv)	2) (iv)	3) (ii)	4) (v)	5) (ii)	6) (i)
7) (v)	8) (v)	9) (ii)	10) (ii)	11) (ii)	12) (i)
13) (i)	14) (i)	15) (v)	16) (iii)	17) (i)	18) (v)
19) (i)	20) (iv)				