



MATHS

BOOKS - MBD NCERT SOLUTIONS

SOME APPLICATIONS OF TRIGONOMETRY

Exercise Long Answer Type Questions

1. A tower stands vertically on the ground.
From a point on the ground, which is $15m$

away from the foot of the tower, the angle of elevation of the top of the tower is found to be 60° . Find the height of the tower.



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2. A 1.2 m tall girl spots a balloon moving with the wind in a horizontal line at a height of 88.2 m from the ground. The angle of elevation of the balloon from the eyes of the girl at any instant is 60° . After some time, the angle of elevation



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3. From a point on a bridge across a river, the angles of depression of the banks on opposite sides, of the river are 30° and 45° respectively. If the bridge is at a height of 3 m from the banks, find the width of the river.



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4. An observer 1.5 m tall is 28.5 m away from a chimney. The angle of elevation of the top of

the chimney from her eyes is 45° . What is the height of the chimney?



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5. The shadow of a tower standing on a level ground is found to be 40 m longer when the Sun's altitude is 30° than when it is 60° . Find the height of the tower.



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



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7. From the top of a 7m high building, the angle of elevation of the top of a cable tower

is 60° and the angle of depression of its foot is 45° . Determine the height of the tower.



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8. From a point P on the ground the angle of elevation of the top of a 10 m tall building is 30° . A flag is hoisted at the top of the building and the angle of elevation of the top of the flagstaff from P is 45° . Find the length of the flagstaff



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9. A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground making an angle 30° with it. The distance between the foot of the tree to the point where the top touches the ground is 8 m. Find the height of the tree.



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10. Two poles of equal heights are standing opposite to each other on either side of the

road which is 80m wide. From a point between them on the road the angles of elevation of the top of the poles are 60° and 30° respectively. Find the height of the poles and the distances of the point from the poles.



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11. As observed from the top of a 75 m high lighthouse from the sea-level, the angles of depression of two ships are 30° and 45° . If one ship is exactly behind the other on the

same side of the lighthouse, find the distance between the two sh



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12. The angles of elevation of the top of a tower from two points at a distance of 4 m and 9 m from the base of the tower and in the same straight line with it are complementary. Prove that the height of the tower is 6m.



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