

A tree is broken by the wind. The top struck the ground at an angle of 30° and at a distance of 30 metres from its root. Find the whole height of the tree. (Use $\sqrt{3} = 1.732$)

Find the height of a mountain if the elevation of its top at an unknown distance from the base is 60° and at a distance 10 km further off from the mountain, along the same line, the angle of elevation is 30° .

Two pillars of equal heights are on either side of a road, which is 100 m wide. The angles of elevation of the top of the pillars are 60° and 30° at a point on the road between the pillars. Find the position of the point between the pillars on the road and the height of the pillars.

From the top of a building 60 m high the angles of depression of the top and the bottom of a tower are observed to be 30° and 60° respectively. Find the height of the tower.

An aeroplane at an altitude of 200 m observes the angles of depression of two opposite points on two banks of the river to be 45° and 60° . Find, in metres, the width of the river. (use $\sqrt{3} = 1.732$)

From a window, 60 m high above the ground, of a house in a street, the angles of elevation and depression of the top and foot of another house on the opposite side of the street are 60° and 45° respectively. Show that the height of the opposite house is $60(1 + \sqrt{3})$ metres.

From the top of a hill the angles of depression of two consecutive kilometer stones due east are found to be 30° and 60° . Find the height of the hill.

An aircraft is flying at a constant height with a speed of 360 km/hour. From a point on the ground, the angle of elevation at an instant was observed to be 45° . After 20 seconds, the angle of elevation was observed to be 30° . Determine the height at which the aircraft is flying. (use $\sqrt{3} = 1.732$)