***Important Question-2013***

**Class – XII**

**Subject – MATHEMATICS (Application of trigonometry)**

:

1. 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 6 m.
2. A straight highway leads to the foot of a tower. A man standing at the top of the tower observes a car as an angle of depression of 30°, which is approaching the foot of the tower with a uniform speed. Six seconds later, the angle of depression of the car is found to be 60°. Find the time taken by the car to reach the foot of the tower from this point.
3. From the top of a 7 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 45°. Determine the height of the tower.
4. From the top of a tower 60 meters high , the angles of depression of the top and bottom of a pole are observed to be 45o and 60o respectively. Find the height of the pole if the Pole and tower stand on the same plane.
5. From the top of a 100m high building the angles of the depression of the top and bottom of the tower are observed to be 45o and 60o. Calculate the height of the tower.
6. The angle of the elevation of the top of the tower from a point A on the ground is 30o . On moving 50 m towards the tower, the angle of elevation is found to be 60o. Calculate the height of the tower.
7. The angle of elevation of an aero plane from a point on the ground is 45o . After the flight of 15 seconds, the angle of elevation changes to 30o  If the aero plane is flying at a constant height of 3000m, find the speed of the aero plane.
8. The angle of elevation of top and bottom of flag staff fixed at top of the pole of height 40m are 60o and 45o respectively from the same point on the ground, find the height of the flag staff and distance of observation point from the foot of pole.
9. From the top of a 10 m high building the angle of elevation of top of the tower is 45o  and the angle of depression of foot of the building from the top of a tower is found to be 60o. find the distance between foots of the building and tower and height of the tower.
10. From the deck of a ship above 5m from the sea level the angle of elevation of top of the mountain is 45o  and the angle of depression of foot of the mountain is 30o. find the distance ship from the foots of the mountain and height of the mountain.