10 Class Math Tuition Assignment

Assignment – 9

<u>Assigned To</u> = **All 10 Class Student**

Note: All Questions are compulsory to attempt

Chapter = Some Applications of Trigonometry

Submission Date = See on portal   MM = 30

Q1. The shadow of a tower standing on 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.

Q2. A tree breaks due to a storm and the broken part bends so that the top of the tree touches the ground making an angle of 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.

Q3. **Two poles of equal heights are standing opposite each other on either side of the road, which is 80 m 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.**

Q4. An observer 1.5 metres tall is 20.5 metres away from a tower 22 metres high. Determine the angle of elevation of the top of the tower from the eye of the observer.

Q5. The angle of elevation of the top of a tower from two points distant s and t from its foot are complementary. Prove that the height of the tower is √st.

Q6. The angle of elevation of the top of a tower from a certain point is 30°. If the observer moves 20 metres towards the tower, the angle of elevation of the top increases by 15°. Find the height of the tower.

10 Class Math Tuition Assignment

Q7. A circus artist is climbing a 20 m long rope, which is tightly stretched and tied from the top of a vertical pole to the ground. Find the height of the pole, if the angle made by the rope with the ground level is 30°

Q8. 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.

Q9. A flagstaff stands at the top of a 5m high tower. From a point on the ground, the angle of elevation of the top of the flagstaff is 60° and from the same point, the angle of elevation of the top of the tower is 45°. Find the height of the flagstaff.

Q10. A straight highway leads to the foot of a tower. A man standing at the top of the tower observes a car at an angle of depression of 30°, which is approaching the foot of the tower at 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.