

St. Francis Xavier School
Work Sheet
Subject – Mathematics
Class – X

Question 1:

An electric pole is 10 m. high. If its shadow is $10\sqrt{3}$ m. in length, find the elevation of the sun.

Question 2:

From the top a cliff 92 m. high, the angle of depression of a buoy is 20° , Calculate the nearest meter, the distance of the buoy from the top of the cliff.

Question 3:

What is the angle of elevation of the sun when the length of shadow of a vertical pole is equal to its height?

Question 4:

From a point 20 m. away from the foot of a tower, the angle of elevation of the top of the tower is 60° . Find the height of the tower.

Question 5:

If the length of a shadow cast by a pole be $\sqrt{3}$ times the length of the pole, find the angle of elevation of the sun.

Question 6:

Prove the following identities:

$$\frac{\sin A}{1 + \cos A} + \frac{1 + \cos A}{\sin A} = 2 \operatorname{cosec} A$$

Question 7:

The sum of two natural numbers is 8. Determine the numbers, if the sum of their reciprocals is $8/15$.

Question 8:

From the top of the top of a light house 100 m high the angles of depression of two ships on opposite sides of its are 48° and 36° respectively. Find the distance between the two ships to the nearest meter.

Question 9:

In a rhombus, if diagonals are 30 cm. and 40 cm, find its perimeter.

Question 10:

The mid-points D, E, F of sides AB, BC and CA of a triangle are (3, 4), (8, 9) and (6, 7) respectively. Find the co-ordinates of vertices of the triangle.