9. Some Applications of Trigonometry

8 Marks:

* 1) Example - 4 in page No: 50
* 2) Example - 5 in page No: 52
* 3) Example - 6 in page No: 54
* 4) Exercise - 9.1 ⟶ 2, 4, 9, 10, 12 problems in page No's: 58, 60
  5) Exercise - 9.1 ⟶ 3, 6, 7, 8, 14 problems in page No's: 58, 60

2 Marks:

Draw the Diagrams for the following situations:

1) Example - 1 in page No: 46
2) Example - 5 in page No: 52
3) Exercise - 9.1 ⟶ 1, 4, 5, 7, 12 in page No's: 58, 60
4) You are observing top of your school building at an angle of elevation 45° from a point which is 15m distance from the foot of the building.
5) Define angle of elevation with diagram
6) Vani observes Rani on the ground from the balcony of the first floor of a building of height 10m at an angle of depression of 30°
7) A boy observed the top of an electric pole at an angle of elevation of 60° when observation point is 8m away from the foot of the pole.
8) "The top of a clock tower is observed at an angle of α° and the foot of the tower is at the distance of d meters from the observer" draw the diagram for this data.
9) A person is flying a kite at an angle of elevation α° (or) 30° and the length of thread from sand to kite is l. (or) 20m
10) Sravani observes a car on the ground from the balcony of the first floor of a building at an angle of depression α° and the height of first floor of building is h meters.

1 Mark:

1) A person standing 20m <u>(or) 25m</u> away from the base of a building observes that the angle of elevation to the top of the building is 45°, then the height of the building is _____.

2) If the shadow of a tree is $\sqrt{3}$ times the height of the tree then the angle of elevation of the sun at the time is _____.

3) The length of the shadow of a pole is equal to the height of the pole then the angle of elevation of the top of the pole is _____.

4) The top of a clock tower is observed at an angle of 30° from a point on the ground. If the height of the tower is 10m then the distance from the foot of the tower is _____.

5) A slider of length 20m is placed to a vertical pole with an angle of elevation 30° then the height of the pole is _____.

6) The height of a tower is 10m. What is the length of its shadow when sun's altitude is 45°.

7) The angle of depression of a ship from the top of a light house is 45°. If the height of the light house is 50m, The distance of the ship from the light house is _____.

8) The angle of elevation of the top of a tower from a point on the ground, which is 30m, away from the foot of the tower is 30°. Find the height of the tower.

9) The ratio of length of a rod and its shadow is $1:\sqrt{3}$, the angle of elevation of the sun is _____.

10) A boy observed 20m away from the base of a 20m high pole. Find the angle of elevation of the top.

11) The ratio of height of a tower and the length of its shadow on the ground is $\sqrt{3}:1$. What is the angle of elevation of the sun?

12) A ladder touches a wall at a height of 5m. find the angle made by the ladder with the ground if its length is 10m?

13) If the height of a tower is $100\sqrt{3}$ m, then find the angle of elevation of its top from a point 100m away from its foot.

14) An observer 28.5m away from chimney. The angle of elevation at the top of the chimney is 45°. What is the height of the chimney?

15) A circus artist is climbing a 20m 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° _____

16) Rinky observes a can on the ground from the balcony of the first floor of a building at the angle of depression β° the height of the first floor of the building is x m. Draw the diagram for this data.

17) In the given figure, the positions of the observer and the height object are mentioned, the angle of depression is _____