

12. APPLICATIONS OF TRIGONOMETRY

1. If the angle of elevation of the top of a tower at a distance of 500 m from the foot is 30° . Then the height of the tower is _____
2. A pole 6m high casts a shadow $2\sqrt{3}$ m long on the ground, then sun's elevation is _____
3. The height of the tower is 100m. When the angle of elevation of sun is 30° , then shadow of the tower is _____
4. If the height and length of the shadow of a man are the same, then the angle of elevation of the sun is _____
5. The angle of elevation of the top of a tower, whose height is 100m, at a point whose distance from the base of the tower is 100m is _____
6. The angle of elevation of the top of a tree height $200\sqrt{3}$ m at a point at distance of 200m from the base of the tree is _____
7. A lamp post $5\sqrt{3}$ m high casts a shadow 5m long on the ground. The sun's elevation at this moment is _____
8. The length of shadow of 10m high tree if the angle of elevation of the sun is 30° _____
9. If the angle of elevation of a bird sitting on the top of a tree as seen from the point at a distance of 20m from the base of the tree is 60° . Then the height of the tree is _____
10. The tops of two poles of height 20m and 14m are connected by a wire. If the wire makes an angle of 30° with horizontal, then the length of the wire is _____
11. The ratio of the length of a tree and its shadow is $1:1/\sqrt{3}$. The angle of the sun's elevation is _____ degrees.
12. If two towers of height h_1 and h_2 subtend angles of 60° and 30° respectively at the mid-point of the line joining their feet, then $h_1: h_2$ is _____
13. The line drawn the eye of an observer to the object viewed is called _____
14. If the angle of elevation of the sun is 30° , then the ratio of the height of a tree with its shadow is _____
15. From the figure $\theta =$ _____
16. The angle of elevation of the sun is 45° . Then the length of the

- shadow of a 12m high tree is _____
17. When the object is below the horizontal level, the angle formed by the line of sight with the horizontal is called _____
 18. When the object is above the horizontal level, the angle formed by the line of sight with the horizontal is called _____
 19. The angle of depression of a boat is 60m high bridge is 60° . Then the horizontal distance of the boat from the bridge is _____
 20. The height or length of an object can be determined with help of _____

ANSWERS

- 1) $500\sqrt{3}$; 2) 60° ; 3) $100\sqrt{3}\text{m}$; 4) 45° ;
- 5) 45° ; 6) 60° ; 7) 60° ; 8) $10\sqrt{3}\text{m}$;
- 9) $20\sqrt{3}\text{m}$; 10) 12m; 11) 60° ; 12) 3:1;
- 13) Line of sight; 14) $1:\sqrt{3}$; 15) 60° ;
- 16) 12m; 17) Angle of depression;
- 18) Angle of elevation; 19) $20\sqrt{3}\text{m}$;
- 20) Trigonometric Ratios.