1. A ladder 15 m long just reaches the top of a vertical wall. If the ladder makes an angle of 60° with the wall, then the height of the wall is

(a) $15\sqrt{3}\,\text{m}$ (b) $\frac{15\sqrt{3}}{2}\,\text{m}$ (c) $\frac{15}{2}\,\text{m}$ (d) $15\,\text{m}$ [CBSE 2013]

2. The angle of depression of a car parked on the road from the top of a $150\,\text{m}$ high tower is 30°. The distance of the car from the tower (in metres) is

(a) $50\sqrt{3}$ (b) $150\sqrt{3}$ (c) $150\sqrt{2}$ (d) 75 [CBSE 2014]

3. If the height of a vertical pole is $\sqrt{3}$ times the length of its shadow on the ground, then the angle of elevation of the sun at that time is

(a) 30° (b) 60° (c) 45° (d) 75° [CBSE 2014]

4. The ratio of the length of a rod and its shadow is $1:\sqrt{3}$. The angle of elevation of the sum is

(a) 30° (b) 45° (c) 60° (d) 90°

5. If the angle of elevation of a tower from a distance of 100 metres from its foot is 60°, then the height of the tower is

(a) $100\sqrt{3}\,\text{m}$ (b) $\frac{100}{\sqrt{3}}\,\text{m}$ (c) $50\sqrt{3}\,\text{m}$ (d) $\frac{200}{\sqrt{3}}\,\text{m}$

6. If the altitude of the sum is at 60°, then the height of the vertical tower that will cast a shadow of length $30\,\text{m}$ is

(a) $30\sqrt{3}\,\text{m}$ (b) $15\,\text{m}$ (c) $\frac{30}{\sqrt{3}}\,\text{m}$ (d) $15\sqrt{2}\,\text{m}$

7. If the angles of elevation of a tower from two points distant a and $b(a > b)$ from its foot and in the same straight line from it are 30° and 60°, then the height of the tower is

(a) $\sqrt{a+b}$ (b) $\sqrt{ab}$ (c) $\sqrt{a-b}$ (d) $\sqrt{\frac{a}{b}}$

8. The tops of two poles of height $20\,m$ and $14\,m$ are connected by a wire. If the wire makes an angle of 30° with horizontal, then the length of the wire is

(a) $12\,m$ (b) $10\,m$ (c) $8\,m$ (d) $6\,m$

9. From the top of a cliff $25\,m$ high the angle of elevation of a tower is found to be equal to angle of depression of the foot of the tower. The height of the tower is

(a) $25\,m$ (b) $50\,m$ (c) $75\,m$ (d) $100\,m$

10. The height of a tower is $100\,\text{m}$. When the angle of elevation of the sun changes from 30° to 45°, 3 the shadow of the tower becomes x metres less. The value of x is

(a) $100\,\text{m}$ (b) $100\sqrt{3}\,\text{m}$ (c) $100(\sqrt{3}-1)\text{m}$ (d) $\frac{100}{\sqrt{3}}\text{m}$

11. If the length of the shadow of a vertical pole is equal to its height, the angle of elevation of Sun altitude is

(a) 45° (b) 60° (c) 30° (d) 75°

12. If the ratio of height of a tower and the length of its shadow on the grounds is $\sqrt{3}:1$, then the angle of elevation of the sun is

(a) 30° (c) 60° (b) 45° (d) 90°

13. The length of the shadow of a $20\,\text{m}$ tall pole, on the ground when the sun's elevation is 45° is

(a) $10\,\text{m}$ (c) $30\,\text{m}$ (b) $20\,\text{m}$ (d) $40\,\text{m}$

14. A pole $10\,\text{m}$ high cast a shadow $10\,\text{m}$ long on the ground, then the sun's elevation is

(a) 45° (b) 60° (c) 90° (d) None

15. The ratio of the length of a pole and its shadow is $1:\sqrt{3}$. The angle of elevation of the sun is

(a) 30° (b) 45° (c) 60° (d) 90°