

CLASS 10 · HOTS · OLYMPIAD PREPARATION · DPP SHEET

Chapter 9: HOTS: Applications of Trigonometry (Class 10)

Daily practice problems: 8 questions with an answer key

Try every question on your own first. The answer key is on the last page.

1. The angle of elevation of the top of a tower from a point 30 m from its foot on level ground is 60° . Find the height of the tower.
2. From the top of a 50 m high building the angle of depression of the foot of a tower is 45° and the angle of elevation of the top of the tower is 30° . Find the height of the tower.
3. The angle of elevation of the top of a tower is 30° . After walking 30 m towards it the angle becomes 60° . Find the height of the tower.
4. Two poles of equal height stand on either side of a road 60 m wide. At a point on the road the angles of elevation of their tops are 60° and 30° . Find the height and the distances of the point from the poles.
5. From the top of a 100 m high hill the angles of depression of two boats in the same direction are 30° and 60° . Find the distance between the boats.
6. A kite is flying at a height of 60 m and the string makes an angle of 60° with the ground. Find the length of the string, assuming it is straight.
7. The shadow of a tower on level ground is $\sqrt{3}$ times its height. Find the angle of elevation of the sun.
8. A ladder 10 m long leans against a wall and makes an angle of 60° with the ground. How high up the wall does it reach?

Answer Key

1. $30\sqrt{3}$ m, about 52 m.
2. $50 + \frac{50}{\sqrt{3}}$ m, about 78.9 m.
3. $15\sqrt{3}$ m, about 26 m.
4. Height $15\sqrt{3}$ m, distances 15 m and 45 m.
5. $\frac{200}{\sqrt{3}}$ m, about 115.5 m.
6. $40\sqrt{3}$ m, about 69.3 m.
7. 30° .
8. $5\sqrt{3}$ m, about 8.66 m.

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