Class 10 Mathematics - Some Applications of Trigonometry

Name: _____

Date: _____

Advanced Worksheet 3

Questions

1. The shadow of a tower is 40 m longer when the angle of elevation of the Sun is 30° than when it is 60°. Find the height of the tower.
2. A building is 10 m high. A flagstaff is fixed on its top. From a point on the ground, the angle of elevation of the top of the building is 30° and that of the top of the flagstaff is 45°. Find the length of the flagstaff.
3. Two poles of equal height stand opposite each other on either side of a road 80 m wide. From a point between them, the angles of elevation of their tops are 60° and 30°. Find the height of the poles.
4. From a point on the ground, the angle of elevation of the top of a tower is 45°. Moving 20 m nearer, the angle becomes 60°. Find the height of the tower.
5. A tree breaks during a storm and its top touches the ground at a point 8 m from its base, making an angle of 30° with the ground. Find the original height of the tree.
6. A 20 m rope is tied from the top of a pole to the ground making an angle of 30° with the ground. Find the height of the pole.

Answer Key

1. $20\sqrt{3}$ m
2. 7.32 m
3. $20\sqrt{3}$ m
4. $10(\sqrt{3} + 1)$ m
5. $8(\sqrt{3} + 1)$ m
6. 10 m