

Unit 4: Right Triangle Trigonometry

ADVANCED · SET 2

Name: _____ Date: _____

Show your work. Round side lengths to the nearest hundredth and angle measures to the nearest tenth of a degree unless an exact value is asked for.

1. In right triangle ABC the right angle is at C. The hypotenuse $AB = 61$ and leg $AC = 11$. Find the length of leg BC.

Answer: _____

2. A right triangle has legs of length 1.5 and 3.6. Find the length of the hypotenuse.

Answer: _____

3. In a 30-60-90 triangle the shorter leg (opposite the 30° angle) has length 14. Find the exact length of the longer leg. Give an exact answer using sqrt.

Answer: _____

4. In a 45-45-90 triangle the hypotenuse has length 20. Find the exact length of each leg. Give an exact answer using sqrt.

Answer: _____

5. A right triangle has legs of length 8 and 15. Find the sine of the acute angle that is opposite the leg of length 8. Give your answer as a fraction.

Answer: _____

6. A right triangle has a hypotenuse of length 40 and one acute angle measuring 32° . Find the length of the side opposite that 32° angle.

Answer: _____

7. In a right triangle, one acute angle measures 37° and the leg adjacent to it has length 45. Find the length of the hypotenuse.

Answer: _____

8. A 25-ft ladder leans against a wall, making a 68° angle with the level ground. Find how high up the wall the top of the ladder reaches.

Answer: _____

9. From a point on level ground 50 m from the base of a tower, the angle of elevation to the top of the tower is 54° . Find the height of the tower.

Answer: _____

10. From the top of a 120-ft cliff, the angle of depression to a boat on the water is 27° . Find the horizontal distance from the boat to the base of the cliff.

Answer: _____

11. A right triangle has legs of length 9 and 40. Find the measure of the smaller acute angle.

Answer: _____

12. A right triangle has a hypotenuse of length 30 and one leg of length 18. Find the measure of the acute angle formed between that leg and the hypotenuse.

Answer: _____