

Unit 4: Right Triangle Trigonometry

ADVANCED

Name: _____ Date: _____

Show all work. Use exact values where asked; otherwise round to the nearest tenth (lengths) or nearest degree (angles). No calculator memory needed beyond $\sin$, $\cos$, $\tan$, and their inverses.

1. A right triangle has legs of length 20 and 21. Find the length of the hypotenuse.

Answer: _____

2. In a right triangle the hypotenuse is 61 and one leg is 60. Find the length of the other leg.

Answer: _____

3. In a right triangle, the side opposite an acute angle is 15 and the side adjacent to it is 8. Find the measure of that angle to the nearest degree.

Answer: _____

4. A right triangle has an acute angle of 34° and a hypotenuse of 25. Find the length of the side opposite the 34° angle, to the nearest tenth.

Answer: _____

5. A right triangle has an acute angle of 52° and a hypotenuse of 40. Find the length of the side adjacent to the 52° angle, to the nearest tenth.

Answer: _____

6. In a right triangle, the side opposite a 28° angle measures 17. Find the perimeter of the triangle, to the nearest tenth.

Answer: _____

7. A right triangle has a hypotenuse of 26 and one leg of length 10. Find the area of the triangle.

Answer: _____

8. A right triangle has a hypotenuse of 50 and one acute angle of 39° . Find the length of its shorter leg, to the nearest tenth.

Answer: _____

9. A right triangle has legs of length 2.5 and 6. Find the length of the hypotenuse.

Answer: _____

10. In a right triangle, one leg is 7 and the hypotenuse is 25. Find the exact value of the sine of the angle opposite the leg of length 7, written as a fraction.

Answer: _____

11. A right triangle has a 45° angle, and each leg measures 8. Find the exact length of the hypotenuse in the form $a\sqrt{b}$.

Answer: _____

12. A 20 ft ladder leans against a wall, making a 65° angle with the ground. It slips so that it now makes a 50° angle with the ground. How much farther from the wall is the base of the ladder now, to the nearest tenth of a foot?

Answer: _____