This worksheet practises calculating unknown sides in a right-angled triangle using trigonometric ratios. You will apply the sine, cosine and tangent ratios to find missing sides. Do not refer to any concepts from later units.

Easy Questions

1. Find the length of the side opposite the 30° angle in a right-angled triangle if the hypotenuse is 10.

2. Find the length of the side adjacent to a 30° angle in a right-angled triangle where the hypotenuse is 10.

3. In a right-angled triangle, if an acute angle is 60° and the side adjacent to the angle is 5, determine the length of the side opposite the angle.

4. In a right-angled triangle, an acute angle measures 45° and the side adjacent to that angle is 7. Find the hypotenuse.

5. In a right-angled triangle, if one acute angle is 40° and the hypotenuse is 8, calculate the length of the side opposite the 40° angle.

Intermediate Questions

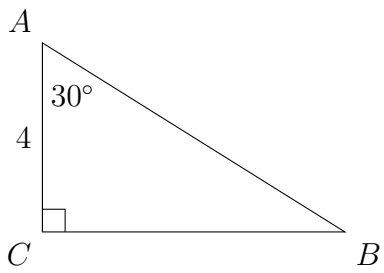
6. In a right-angled triangle, if one acute angle measures 40° and the hypotenuse is 12, find the length of the side opposite the 40° angle.

7. In a right-angled triangle, if one acute angle is 60° and the side adjacent to it is 8, determine the length of the hypotenuse.

8. In a right-angled triangle, with an acute angle of 35° and an adjacent side of length 7, calculate the length of the side opposite the angle.

9. In a right-angled triangle, if one acute angle is 55° and the side opposite to that angle is 9, compute the hypotenuse.

10. Below is a right-angled triangle with right angle at C. Angle A is 30° and side AC is 4. Find the length of the hypotenuse AB.



11. In a right-angled triangle, if an acute angle is 20° and the side adjacent to that angle is 15, find the length of the hypotenuse.

12. In a right-angled triangle with a hypotenuse of 20 and an acute angle of 70°, calculate the length of the side adjacent to the 70° angle.

13. A ladder leans against a wall forming a 65° angle with the ground. If the ladder is 10 metres long, determine the horizontal distance from the wall.

14. In a right-angled triangle, if an acute angle is 50° and the side opposite to it is 7, compute the length of the hypotenuse.

15. A right-angled triangle has an acute angle of 25° with the side adjacent to this angle measuring 9. Find the side opposite the 25° angle.

16. In a right-angled triangle, if the side opposite a 40° angle is 6, determine the length of the side adjacent to the angle.

17. A ramp makes a 15° angle with the ground. Given that the horizontal distance (base) is 2 metres, find the length of the ramp (hypotenuse).

18. In a right-angled triangle, if one acute angle measures 80° and the side opposite that angle is 3, calculate the length of the side adjacent to the 80° angle.

19. In a right-angled triangle, if an acute angle is 55° and the side adjacent to it is 10, compute the length of the side opposite the 55° angle.

20. In a right-angled triangle with a hypotenuse of 13 and an acute angle of 35°, determine the length of the side opposite the 35° angle.

Hard Questions

21. In a right-angled triangle, if one acute angle is 22° and the side adjacent to this angle is 8.5, find the hypotenuse. Give your answer to one decimal place.

22. In a right-angled triangle, the side opposite a 33° angle measures 11. Calculate the side adjacent to the angle, expressing your answer to two decimal places.

23. In a right-angled triangle, if the hypotenuse is 17 and one acute angle is 47°, determine the length of the side adjacent to the 47° angle. Round your answer to two decimal places.

24. For a right-angled triangle, if the side adjacent to a 38° angle is 12.3, calculate the side opposite to the angle. Provide your answer rounded to two decimal places.

25. Find the missing side in a right-angled triangle where an acute angle is 52° and the side opposite this angle is 8.7. Give your answer for the hypotenuse correct to two decimal places.

26. Consider a right-angled triangle with a hypotenuse of 15 and an acute angle of 29°. Compute the side opposite to the angle, rounding your answer to one decimal place.

27. In a right-angled triangle, if one acute angle is 63° and the side adjacent to the angle is 5.5, find the length of the side opposite the 63° angle. Round your answer to two decimal places.

28. A right-angled triangle has an acute angle of 44° and the side opposite to this angle measures 9.2. Determine the length of the hypotenuse, rounded to one decimal place.

29. In a right-angled triangle, if an acute angle is 76° and the side adjacent (base) is 3.8, find the hypotenuse. Give your answer rounded to two decimal places.

30. In a right-angled triangle, the hypotenuse is 22 and one acute angle is 58°. Calculate the side adjacent to the 58° angle, rounding your answer to two decimal places.