

Right Triangle Worksheet 3 — Special Right Triangles and Trigonometry (Advanced)

RightTriangleSolver.com • 30-60-90 and 45-45-90 ratios, sine, cosine and tangent

Name: _____ Date: _____

Instructions: Give exact answers (with $\sqrt{}$) first, then decimals rounded to two decimal places where asked. In Part C the right angle is at C in every question.

Part A: 30-60-90 Triangles (ratio 1 : $\sqrt{3}$: 2)

1. A 30-60-90 triangle has a shortest leg of 7 cm. Find the longer leg and the hypotenuse, exactly and to two decimal places.
2. A 30-60-90 triangle has a hypotenuse of 16 in. Find both legs, exactly and to two decimal places.
3. A 30-60-90 triangle has a longer leg of $9\sqrt{3}$ cm. Find the shortest leg and the hypotenuse.
4. A 30-60-90 triangle has a shortest leg of 2.5 m. Find the longer leg and the hypotenuse, exactly and to two decimal places.

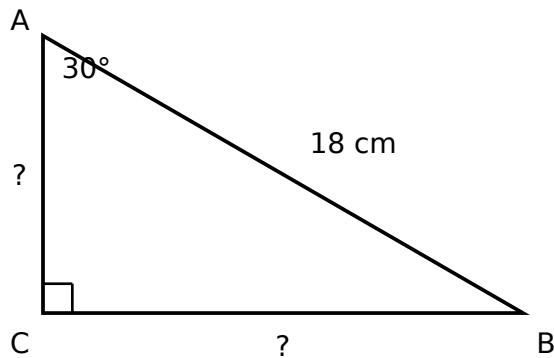
Part B: 45-45-90 Triangles (ratio 1 : 1 : $\sqrt{2}$)

5. A 45-45-90 triangle has legs of 11 cm. Find the hypotenuse, exactly and to two decimal places.
6. A 45-45-90 triangle has legs of $4\sqrt{2}$ in. Find the hypotenuse.
7. A 45-45-90 triangle has a hypotenuse of $10\sqrt{2}$ cm. Find the length of each leg.

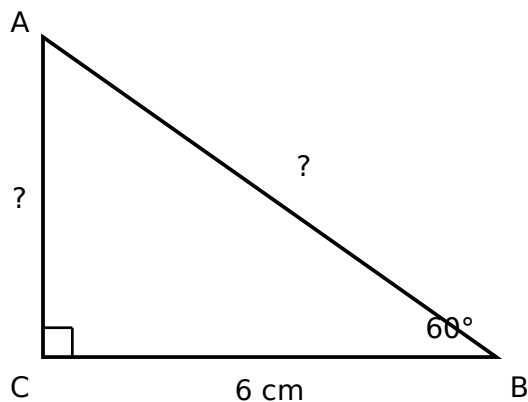
8. A 45-45-90 triangle has legs of 13 m. Find the hypotenuse, exactly and to two decimal places.

Part C: Right Triangle Trigonometry

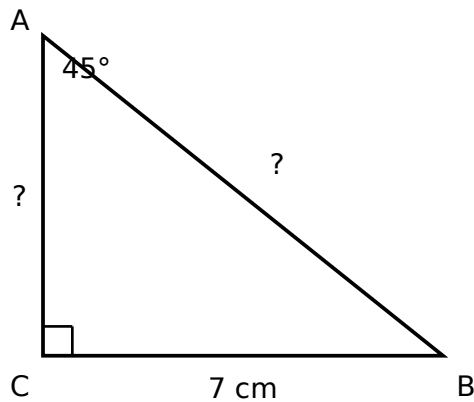
9. In triangle ABC, angle A is 30° and the hypotenuse AB is 18 cm. Find the leg opposite angle A and the leg adjacent to angle A.



10. In triangle ABC, angle B is 60° and the leg adjacent to angle B is 6 cm. Find the hypotenuse and the leg opposite angle B.



11. In triangle ABC, angle A is 45° and the leg opposite angle A is 7 cm. Find the adjacent leg and the hypotenuse.



12. Use a calculator. In triangle ABC, angle A is 52° and the hypotenuse is 15 cm. Find the leg opposite angle A and the leg adjacent to angle A, rounding to two decimal places.

