

Pythagoras in 2D and Introduction to Trigonometry (SOH-CAH-TOA)

Year 9 · Geometry · y9-geo-area-triangle

Name: _____

Date: _____

Class: _____

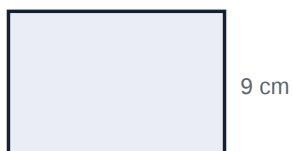
Score: ____ / ____

Instructions

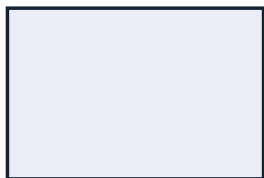
Answer every question in Practice. Try the Challenge section once Practice is complete. 10 questions in total.

Practice

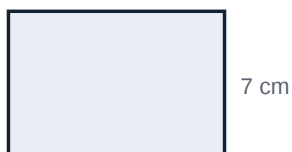
1. A right-angled triangle has legs 9 cm and 12 cm. Find the length of the hypotenuse.



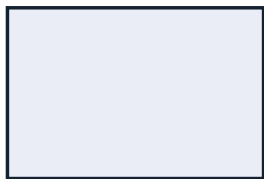
2. In a right-angled triangle, $\sin(30^\circ) = 0.5$. The hypotenuse is 10 cm. Find the length of the side opposite the 30° angle.



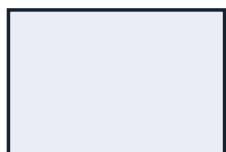
3. A right-angled triangle has a hypotenuse of 25 cm and one leg of 7 cm. Find the other leg.



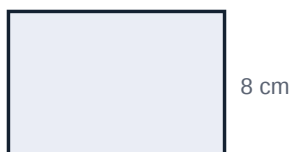
4. In a right-angled triangle, $\cos(60^\circ) = 0.5$. The hypotenuse is 14 cm. Find the length of the side adjacent to the 60° angle.



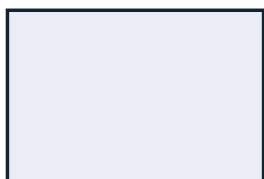
5. In a right-angled triangle, $\tan(45^\circ) = 1$. The side adjacent to the 45° angle is 8 cm. Find the length of the side opposite the 45° angle.



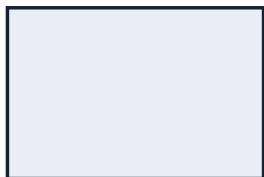
6. The hypotenuse squared equals the sum of the squares of the other two sides, not their sum directly. A right-angled triangle has legs 8 cm and 15 cm. Find the hypotenuse.



7. SOH: use sine when you know or want the opposite side and the hypotenuse. In a right-angled triangle, $\sin(30^\circ) = 0.5$, and the hypotenuse is 20 cm. Find the side opposite the 30° angle.



8. The side adjacent to an angle is next to it, not the hypotenuse. In a right-angled triangle, $\cos(60^\circ) = 0.5$, and the hypotenuse is 18 cm. Find the length of the side adjacent to the 60° angle.



Challenge

1. A right-angled triangle has a hypotenuse of 26 cm and one leg of 10 cm. Find the other leg, then find the perimeter of the triangle.

2. In a right-angled triangle, $\tan(60^\circ) \sim 1.73$. The side adjacent to the 60° angle is 6 cm. Find the length of the side opposite the 60° angle, to 1 decimal place.

