

## PERIMETER AND AREA

### What Is Perimeter and Area?

- **Perimeter** is the measurement of the distance around a figure. It is measured in units and can be measured by inches, feet, blocks, meters, centimeters or millimeters. To find the perimeter of any figure, simply add up the measures of the sides of the figure.
- **Area** is the amount of surface a shape covers. Area is measured in square units, whether the units are inches, feet, meters or centimeters.



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$a^2 + b^2 = c^2$ , where  $a$  and  $b$  are the length of the legs and  $c$  is the length of the hypotenuse of a right triangle.

- The **circumference** is the distance around the circle, it is measured in terms of the diameter, and the formula is  $C = \pi \cdot d$ , where  $\pi$  is **3.14** and  $d$  is the diameter.
- The **area** of a circle is the amount of space it covers. The formula for the area of a circle is:  $A = \pi \cdot r^2$ , where  $\pi$  is usually **3.14** and  $r$  is the radius of the circle.

## How to use perimeter and area

- **Perimeter** is the measurement of the distance around a figure. To get the perimeter of a rectangle with a length of 4 and a width of 5, add the length and the width and multiply times 2, to take into account all sides. If a figure is shown, the sides can just simply be added together. Perimeter can be found for any figure, whether it is a rectangle, parallelogram, triangle or trapezoid.
- The **circumference** is the distance around the circle. If the diameter of the circle is known, the circumference can also be found using the formula  $C = \pi \cdot d$ . If the radius is given, the diameter can be found by doubling the radius and then the circumference formula can be used. For example, what is the circumference of a circle with a radius of 6 cm?



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the  
Then  
and the  
circles

a right  
Pythagorean

theorem. If a triangle is a right triangle and the sides are given, the hypotenuse can be found as follows:

**Ex. A right triangle has sides of 6 cm and 8 cm.**

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 6^2 + 8^2 &= c^2 \\
 36 + 64 &= c^2 \\
 100 &= c^2 \\
 \sqrt{100} &= c^2; c = 10
 \end{aligned}$$

The hypotenuse of the triangle is 10 cm. The Pythagorean theorem can also be used if one leg and the hypotenuse are given to find the missing leg. The Pythagorean theorem is also used to prove that triangles are right triangles.

## Try This!

1. What is the **perimeter** of a triangle with sides of 5 cm, 6 cm and 9 cm?
2. What is the **circumference** if  $C = \pi \cdot d$  and  $\pi = 3.14$ ?

$$d = 12$$

$$d = 3$$



3. V of 5 m?

4. V d a

5. V

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6. A triangle is a right triangle. The legs are 8 cm and 14 cm. What is the length of the **hypotenuse**?
7. A right triangle has a hypotenuse of 26 ft and a leg that is 24 ft. What is the length of the **missing leg**?
8. A triangle has sides of 5 cm and 8 cm. The hypotenuse is 13. Is the triangle a **right triangle**?