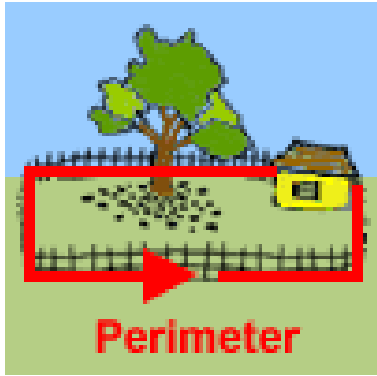


Growing Futures



Perimeter

A polygon is a closed shape bounded by only straight lines.



The perimeter of a polygon is the distance around the outside of the polygon. A polygon is 2-dimensional; however, perimeter is 1-dimensional and is measured in linear units. To help us make this distinction, look at our picture of a rectangular backyard. The yard is 2-dimensional: it has a length and a width. The amount of fence needed to enclose the backyard (perimeter) is 1-dimensional. The perimeter of

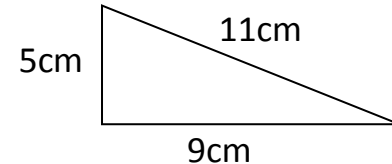
this yard is the distance around the outside of the yard, indicated by the red arrow; It is measured in linear units such as feet or meters.

To find the perimeter of a polygon, take the sum of the length of each side. The polygons below are much smaller than a fenced-in yard. Thus, we use smaller units in our examples, such as centimeters and inches.

Examples

1) Find the perimeter of a triangle with sides measuring 5 centimeters, 9 centimeters and 11 centimeters.

Solution: Perimeter = $11\text{cm} + 9\text{cm} + 5\text{cm} = 25\text{cm}$



The second solution is more commonly used. In fact, in mathematics, we commonly use the following formula for perimeter of a rectangle:

$P = 2L + 2W$, where P is the perimeter, L is the length and W is the width. In the next few examples, we will find the perimeter of other polygons

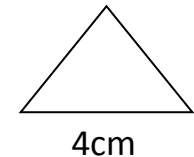
2) Find the perimeter of a square with each side measuring 2 inches

Solution: Perimeter = $2\text{ in} + 2\text{ in} + 2\text{ in} + 2\text{ in} = 8\text{ in}$



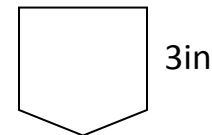
3) Find the perimeter of an equilateral triangle with each side measuring 4 centimeters

Solution: Perimeter = $4\text{ cm} + 4\text{ cm} + 4\text{ cm} = 12\text{ cm}$



5) Find the perimeter of a regular pentagon with each side measuring 3 inches.

Solution: Perimeter = $5(3\text{ in}) = 15\text{ in}$

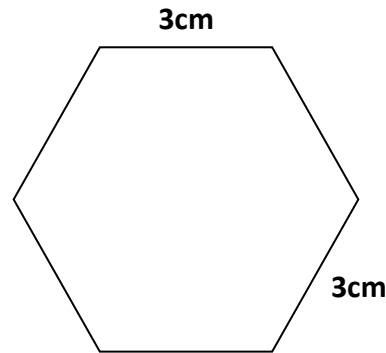


The perimeter of a regular hexagon is 18 centimeters. How long is one side?

Let s represent the length of one side. A regular hexagon has 6 sides, so we can divide the perimeter by 6 to get the length of one side (s).

$$s = 18 \text{ cm} \div 6$$

$$s = 3 \text{ cm}$$



Summary: To find the perimeter of a polygon, take the sum of the length of each side. The formula for perimeter of a rectangle is: $P = 2L + 2W$. To find the perimeter of a regular polygon, multiply the number of sides by the length of one side