

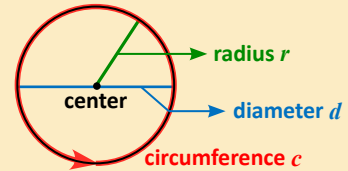
**Circumference**

A **circle** is a simple closed curve on which all points have fixed distance from a center.

The distance around a circle is called the **circumference**.

The **radius** of a circle is the distance from the center of a circle to any point on the circle.

The distance across the circle through its center is the **diameter**.



- A circle has one center; it is named by the center.
- A circle has an infinite number of equal radius; its radius determines the size of the circle.
- A circle has an infinite number of equal diameter; its diameter also determines the size of the circle.
- The diameter of a circle is equal to twice its radius.

$$r = \frac{d}{2} \text{ or } d = 2r$$

For any circle, the ratio of its circumference to its diameter is an irrational number that is approximately equal to **3.14**. The Greek letter  $\pi$  (pi) is used to represent this ratio.

The circumference of a circle is two times the product of  $\pi$  (pi) and the radius, or the product of  $\pi$  (pi) and the diameter  $d$ .

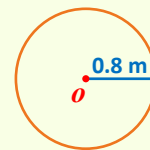
$$C = \pi d \text{ or } C = 2\pi r$$

**Example 1**

What is the circumference of the following circle?  $\pi = 3.14$

**Explanation**

$C = 2\pi r$  and  $r = 0.8 \text{ m}$ , therefore  $C = 2 \times 3.14 \times 0.8 \text{ m} = 5.024 \text{ m}$ .



**Example 2**

What is the perimeter of half a circle when the radius is  $r$ ?

**Explanation**

The perimeter of half a circle is formed by half of the circumference of the full circle plus a diameter.

Therefore, the answer is  $\frac{C}{2} + d = \frac{2\pi r}{2} + d = \pi r + 2r$ .

