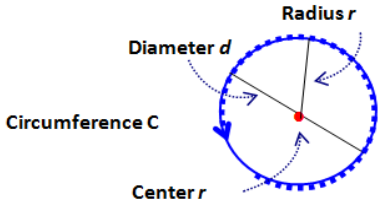
Circumference and Area of a Circle

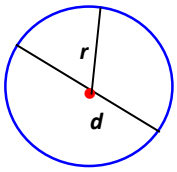
A **circle** consists of all points in a plane that are the same distance from a fixed point called **center**. The distance between the center and any point on the circle is the **radius**. The distance across the center is the **diameter**.



The **circumference** of a circle is the distance around the circle. For a circle, the ratio of its circumference to its diameter is an irrational number that is approximately equal to 3.14 or $\frac{22}{7}$. The Greek letter π (pi) is used to represent this ratio.

The circumference C of a circle is the product of π and the diameter d, or twice the product of π and the radius r.

Algebra $C = \pi d$ $C = 2\pi r$



Example 1: Scientists have identified the faint outline of part of an ancient meteor crater on the cast of Mexico. The rest of the approximately circular crater lies underwater. The creator's diameter is about 170 kilometers. Approximate the distance around the creator to the nearest kilometer.

$C = \pi d$	Write the formula for circumference of a circle.
$\approx 3.14(170)$	Substitute 3.14 for π and 170 for d.
≈ 533.8	Multiply

The distance around the creator is about 534 kilometres.

The area A of a circle is the product of π and the square of the radius r.

Algebra $A = \pi r^2$