

Basic definitions related to a circle

Center: A point inside the circle. All points on the circle are equidistant or at the same distance from the center point.

Radius: The radius is the distance from the center to any point on the circle. It is half the diameter

Diameter: The distance across the circle. The length of any chord passing through the center. It is twice the radius.

Circumference: The circumference is the distance around the circle.

Area: Area is the area of the region enclosed by the circle.

Chord: A line segment linking any two points on a circle.

Tangent: A line passing a circle and touching it at just one point.

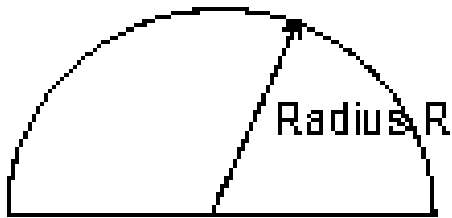
Secant: A line that intersects a circle at two points.

Semi- Circle

A semicircle is a half circle, formed by cutting a whole circle along a diameter line. Any diameter of a circle cuts it into two equal semicircles. An alternative definition is that it is an open arc.



Area of a semicircle:



A Semi-Circle with radius R is

shown

The area of a semicircle is half the area of the circle from which it is made. The area of a circle is πR^2 , where R is the radius. So, the formula

$$\text{area} = \frac{\pi R^2}{2}$$

Where R is the radius of the semi - circle

for the area of a semicircle is:

Perimeter of a Semicircle:

The perimeter of a semicircle is not half the perimeter of a circle. From the figure above it is clear that, the perimeter is the curved part, which is half the circle, plus the diameter line across the bottom.

The perimeter of a circle is $2\pi R$

So the curved part is half that, or πR and the base line is twice the radius or $2R$. So, the formula for the perimeter of a semicircle is:

perimeter = $\pi R + 2R$ Where R is the radius of the semicircle

Angle inscribed in a semicircle:

Theorem:

The angle inscribed in a semicircle is always 90° or right angle.

