CIRCLES

Circle is formed by joining all the points which are equidistant from a certain point called the "CENTRE" of the circle. The distance between the points and the centre is called the circle's radius. Twice the radius equals the circle's diameter.

- The area of the circle which is the space inside the circle is given by $A = \pi r^2$
- Circumference of the circle which is the perimeter of the circle is given by $C = 2\pi r$

Some Properties:

Property-1

A Tangent, a line that touches the circle at only one point is perpendicular to the radius at the point of tangency.

Property-2

A chord however touches/intersects the circle at two points. Angles on the circumference of the circle, opposite to the same chord are all equal. However all of these have to be one side of the chord.

Two angles subtended on the circumference by the same chord but on opposite sides of the chord add up to 180 degrees.

Property-3

An angle subtended by a chord at the centre of the circle is double an angles subtended by the same chord on the circumference of the circle.

Property-4

The diameter is also a chord which is the longest chord of the circle which passes through the center of the circle also subtending an angle on the circumference of the circle which is equal to 90 degrees. It's only the diameter which can subtend a right angle or 90 degrees on the circumference of the circle.

Parts of a Circle:

Look at parts of a circle,

- A part of the circumference of the circle is an arc
- A part of the area of the circle like a sector
- A part of the area of the circle can also be a segment

What are arc and a sector are and how do you measure them?

An Arc is actually a part of or a fraction of the circumference of a circle. Now the length of the arc depends on the angle it subtends at the center of the circle.

Let’s say, if there was an angle x at the center of the circle of the circle then x over 360 is

x/360 = Arc/Circumference = Area of the Sector/ Area of the Circle

To calculate the area of a segment, on can subtract the area of the triangle from the area of the sector as shown.

So it’s going to be:
T**he *area of the sector - area of the triangle* = Area of segment**