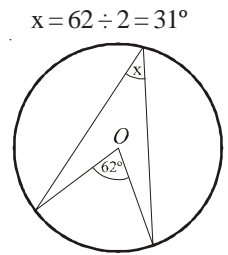
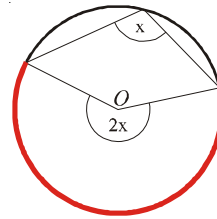
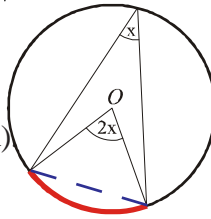


Circle Theorems

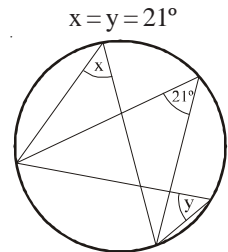
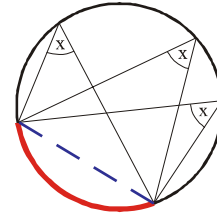
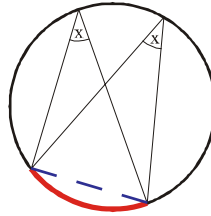
1) Angle at the centre

The angle at the centre is **twice** the angle at the circumference (standing on the same chord).



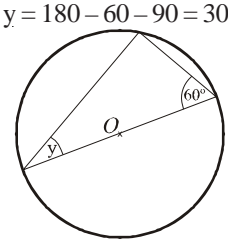
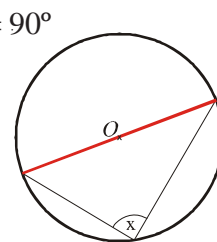
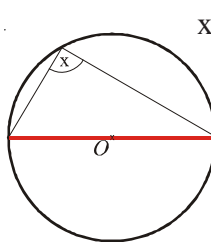
2) Angles in the same segment

Angles at the circumference standing on the same chord and in the same segment are **equal**.



3) Angle in a semicircle

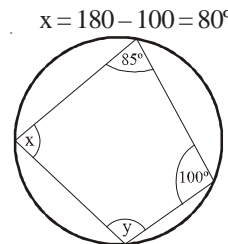
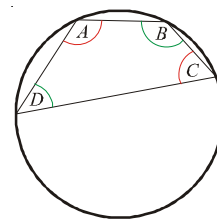
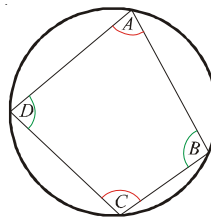
Angles at the circumference standing on a diameter are **equal to 90°**.



4) Cyclic quadrilaterals

A quadrilateral whose 4 vertices lie on the circumference of a circle is called a cyclic quadrilateral.

Opposite angles of a cyclic quadrilateral **add up to 180°** (supplementary angles).



$$A + C = 180^\circ$$

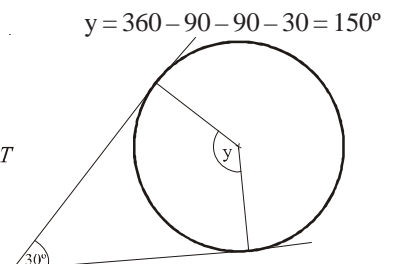
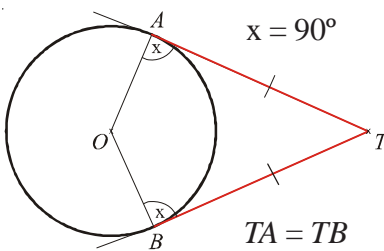
$$B + D = 180^\circ$$

$$y = 180 - 85 = 95^\circ$$

5) Tangents to a circle

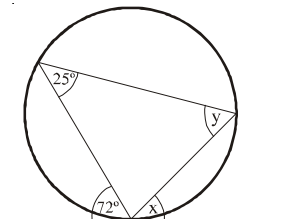
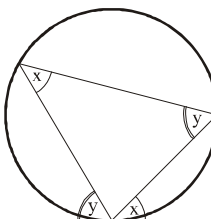
A tangent to a circle is always **perpendicular** to a radius at the point of contact (90° angle).

Two tangents drawn from the same point are **equal in length**.



6) Alternate segment

The angle between a tangent and a chord is **equal** to any angle made by that chord in the alternate segment.



$$x = 25^\circ$$

$$y = 72^\circ$$