Circle Theorems Cheat Sheet

Essential circle formulas and theorems. Everything you need for circle geometry in one page.

Basic Circle Formulas

Circumference: $C = 2\pi r = \pi d$

Area: $A = \pi r^2$

Diameter: $d = 2r$

Arcs and Sectors

Arc length (rad): $s = r\theta$

Arc length (deg): $s = (\theta/360) \times 2\pi r$

Sector area (rad): $A = (1/2)r^2\theta$

Sector area (deg): $A = (\theta/360) \times \pi r^2$

Circle Theorems

Inscribed angle = half the central angle on the same arc

Angles in a semicircle = 90 degrees

Angles in the same segment are equal

Opposite angles in a cyclic quadrilateral sum to 180 degrees

Tangent and Chord Properties

A tangent is perpendicular to the radius at the point of contact

Two tangents from an external point are equal in length

The perpendicular from center to a chord bisects the chord

Equal chords are equidistant from the center

Remember: radians and degrees are interchangeable. To convert, use π radians = 180 degrees.