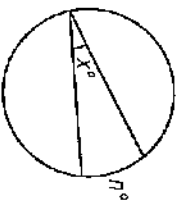# FORMULA SHEET

Formulas that you may need to work questions in this document are found below.
You may use calculator π or the number 3.14.
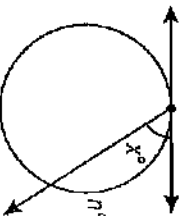
Properties of Circles

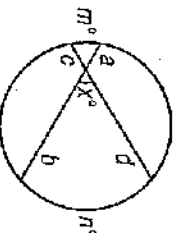Angle measure is represented by x. Arc measure is represented by m and n. Lengths are given by a, b, c, and d.

Inscribed Angle
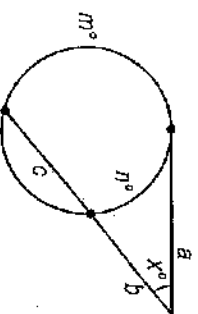
$$x = \frac{1}{2}n$$

Tangent-Chord

$$x = \frac{1}{2}n$$
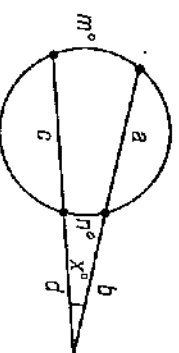
2 Chords

$$a \cdot b = c \cdot d$$

$$x = \frac{1}{2}(m + n)$$

Tangent-Secant
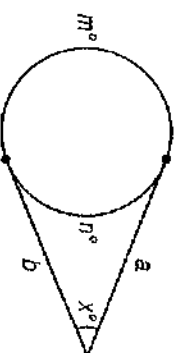
$$a^2 = b(b + c)$$

$$x = \frac{1}{2}(m - n)$$

2 Secants

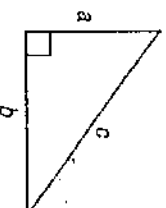$$b(a + b) = d(c + d)$$

$$x = \frac{1}{2}(m - n)$$

2 Tangents

$$a = b$$

$$x = \frac{1}{2}(m - n)$$

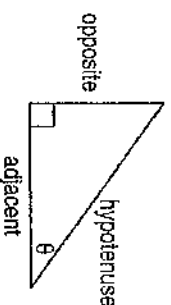## Right Triangle Formulas

Pythagorean Theorem:

If a right triangle has legs with measures a and b and hypotenuse with measure c, then...

$$a^2 + b^2 = c^2$$

Trigonometric Ratios:

$$\sin \theta = \frac{opposite}{hypotenuse}$$

$$\cos \theta = \frac{adjacent}{hypotenuse}$$

$$\tan \theta = \frac{opposite}{adjacent}$$

Coordinate Geometry Properties

Distance Formula: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Midpoint: $\left(\dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2} \right)$

Slope: $m = \dfrac{y_2 - y_1}{x_2 - x_1}$

Point-Slope Formula: $(y - y_1) = m(x - x_1)$

Slope-Intercept Formula: $y = mx + b$

Standard Equation of a Line: $Ax + By = C$