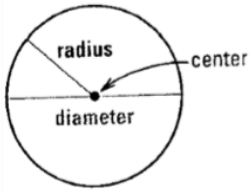
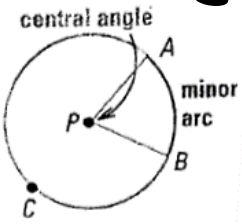
Name: _____

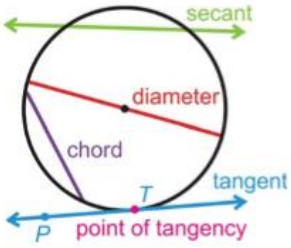
Accelerated Geometry

Chapter 10 – Circles





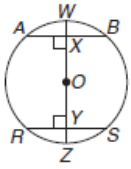
Geometry Book



- In a circle or in congruent circles, two minor arcs are congruent if and only if their corresponding chords are congruent.
- If all the vertices of a polygon lie on a circle, the polygon is said to be **inscribed** in the circle and the circle is **circumscribed** about the polygon.

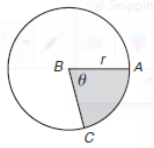
Diameters and Chords

- In a circle, if a diameter is perpendicular to a chord, then it bisects the chord and its arc.
- In a circle or in congruent circles, two chords are congruent if and only if they are equidistant from the center.



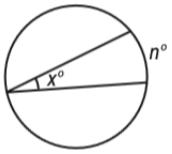
- If an angle of an inscribed polygon intercepts a semicircle, the angle is a right angle.
- If a quadrilateral is inscribed in a circle, then its opposite angles are supplementary.

- If a line is tangent to a circle, then it is perpendicular to the radius drawn to the point of tangency.
- If a line is perpendicular to a radius of a circle at its endpoint on the circle, then the line is a tangent to the circle.
- If two segments from the same exterior point are tangent to a circle, then they are congruent.



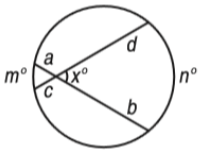
Arc Length: $L = \frac{\theta}{360} C$

Sector Area: $A = \frac{\theta}{360} \pi r^2$



Inscribed Angle

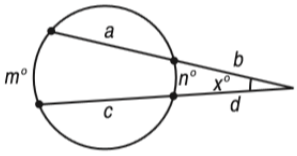
$x = \frac{1}{2} n$



2 Chords

$a \cdot b = c \cdot d$

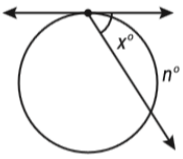
$x = \frac{1}{2}(m + n)$



2 Secants

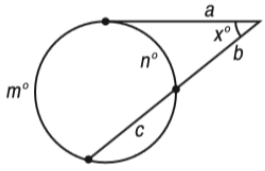
$b(a + b) = d(c + d)$

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



Tangent-Chord

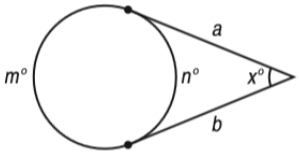
$x = \frac{1}{2} n$



Tangent-Secant

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

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



2 Tangents

$a = b$

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

Circles:

Equation of circle center at origin:

$x^2 + y^2 = r^2$ where r is the radius.

Equation of circle not at origin:

$(x-h)^2 + (y-k)^2 = r^2$ where (h,k) is the center and r is the radius.