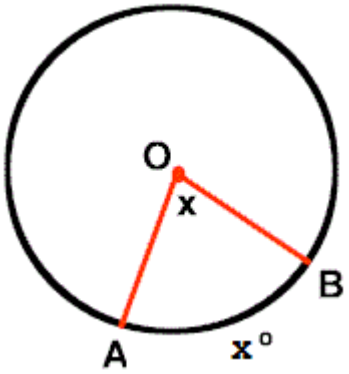
Angles in a Circle

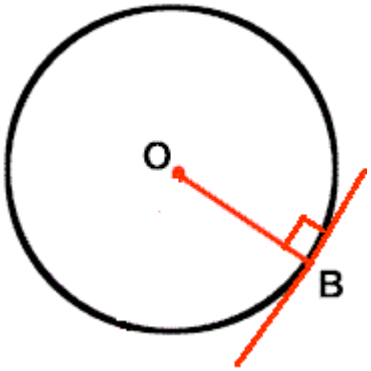
A Summary by David Pleacher

Types of Angles

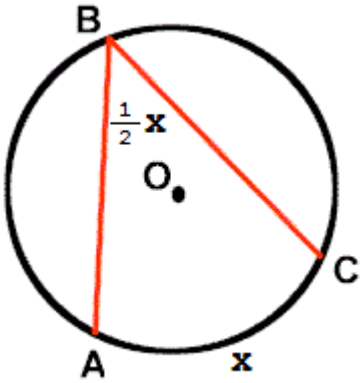
1. central angle = arc



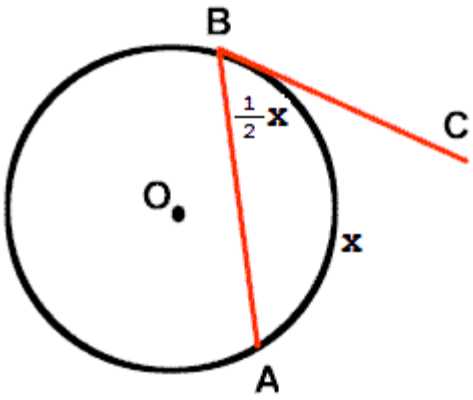
2. angle formed by radius and tangent = 90°



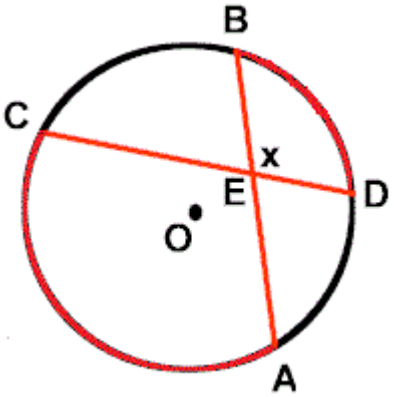
3. inscribed angle = 1/2 arc



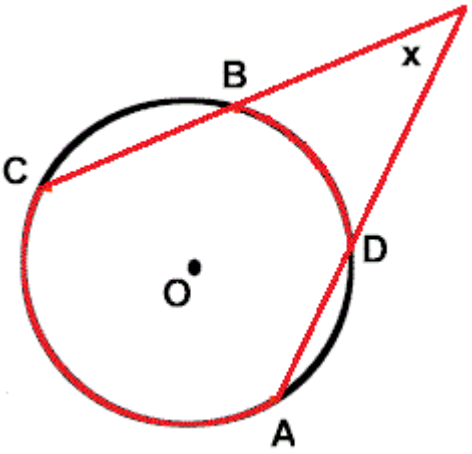
4. angle formed by tangent and chord = 1/2 arc



5. angle formed by 2 lines intersecting inside a circle
   = 1/2 of the sum of the 2 intercepted arcs

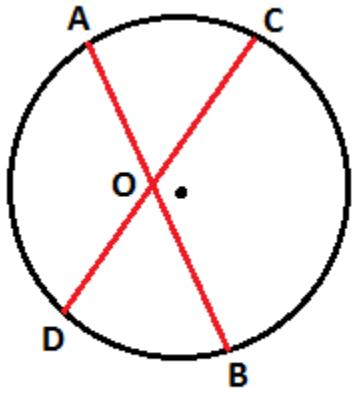


6. angle formed by 2 lines intersecting outside a circle
   = 1/2 of the difference of the 2 arcs



Important postulates, definitions, and theorems

1. All radii of a circle are congruent.
2. If a radius is perpendicular to a chord, then it bisects it. (converse is also true)
3. If 2 arcs of a circle are congruent, then the chords are congruent. (converse is also true)
4. If 2 chords are equidistant from the center of a circle, then they are congruent.
   (converse is also true)
5. If a radius bisects a chord, then it bisects its arc. (converse is also true)
6. An angle inscribed in a semicircle is a right angle.
7. Tangent segments to a circle are congruent.
8. A radius is perpendicular to a tangent.
9. If two chords intersect inside a circle, the products of their segments are equal.



AO * OB = CO * OD