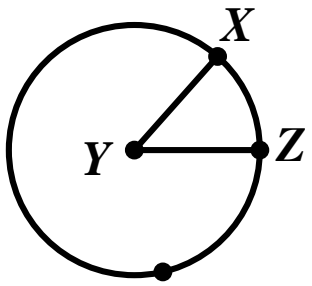
Appendix A

Important Definitions Theorems and Formulas

Central Angle-A central angle is an angle formed by two intersecting radii such that its vertex is at the center of the circle.

Example:
<XYZ is a central angle inscribed in a circle.
Its intercepted arc is the minor arc from X to Z.
m<XYZ = minor arc from X to Z.

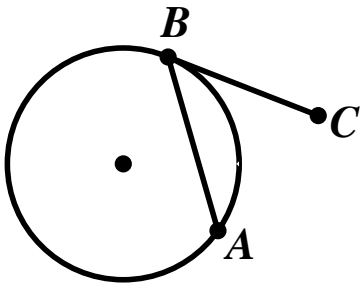


NOTE: The measure of an arc of a circle is equal to the measure of the central angle that intercepts the arc.

Inscribed Angle-An inscribed angle is an angle with its vertex "*on*" the circle, formed by two intersecting chords.
Inscribed Angle= $\frac{1}{2}$ of the intercepted Arc.

Tangent Chord Angle-An angle formed by an intersecting tangent and chord has its vertex "on" the circle.
Tangent Chord Angle= $\frac{1}{2}$ of the intercepted Arc.

Example:

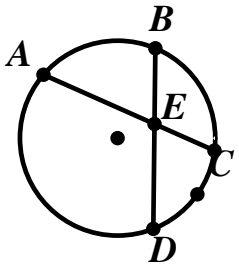


Measure of $\measuredangle ABC = \frac{1}{2}$ measure of Arc AB

Angle Formed Inside of a Circle by Two Intersecting Chords-When two chords intersect "inside" a circle, four angles are formed. At the point of intersection, two sets of vertical angles can be seen in the corners of the X that is formed on the picture. Remember: vertical angles are equal.

Angle formed inside by two chords= $\frac{1}{2}$ the sum of intercepted arcs.

Example:



$$m\measuredangle BEC = \frac{1}{2}\, mARC\ AC + mARC\ BC.$$

$$\frac{\text{arc length}}{\text{circumference}} = \frac{\text{arc measure}}{360^\circ} = \frac{\text{area of sector}}{\text{area of circle}}$$