Expectations

2.1   The student will analyze two- and three- dimensional figures using tools and technology when appropriate.

2.3   The student will apply concepts of measurement using tools and technology when appropriate.

Essential Questions

How are the lengths of tangent segments, secant segments, and chords related and applied?

How are angles and intercepted arcs of circles related and applied?

Enduring Understanding

Relationships exist among angles, segments, lengths, circumference, and area of circles.

Indicators

2.1.1   analyze the properties of geometric figures.
         2.1.1.h represent and analyze circles and spheres, including radius, diameter, chord, tangent, secant, central/inscribed angle, inscribed and circumscribed.

2.1.2   identify and/or verify properties of geometric figures using the coordinate plane and concepts from algebra.
         Properties and relationships include:
         2.1.2.e circle, including radius, diameter, tangent, and chord.

2.1.4   construct and/or draw and/or validate properties of geometric figures using appropriate tools and technology.
         Properties and relationships include:
         2.1.4.d   polygons, including regular, non-regular, equilateral, and equiangular.

         2.1.4.2   define and illustrate locus of points in both two and three dimensions.

2.3.2   use techniques of measurement and estimate, calculate, and/or compare perimeter, circumference, area, volume, and/or surface area of two-and three-dimensional figures and their parts.

         2.3.2.1   calculate the length of a given arc of a circle.
         2.3.2.2   solve problems using the areas of segments and sectors of circles.