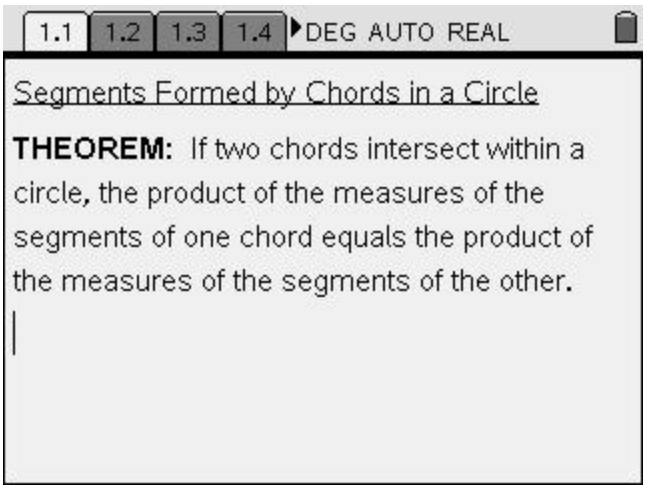
Segments Formed by Chords **Name _____**

In this lesson you will investigate the relationship among the segments formed by intersecting chords in a circle.



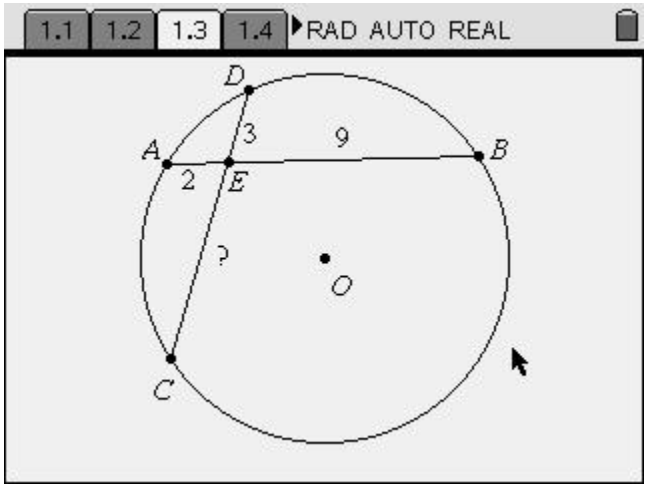
Open ***chord segments.tns*** on your TI-Nspire handheld and follow along with your teacher, using this worksheet as a reference throughout the lesson.

On page 1.2, you will find circle O with chords AB & CD, all labeled with their lengths. As you drag any of the endpoints of the 2 chords, notice how "a ≅ b" and "c ≅ d" change to reflect the products of each of the chords' 2 segments. The congruent products indicate that the products of the measures of the segments of each chord are consistently equal.

Applying the Theorem

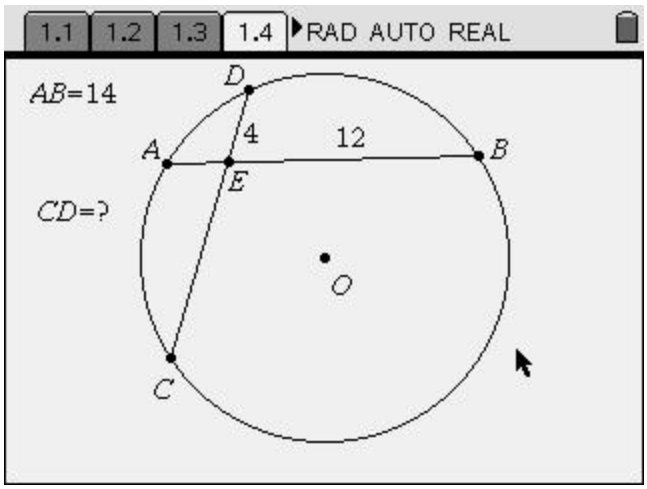
Now, use the theorem, and the diagrams below, to answer the questions on pages 1.3 to 1.6.

#1.3

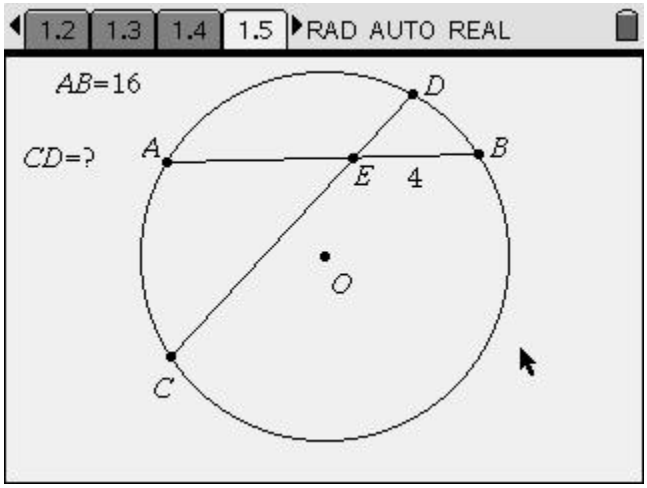


Angles Formed by Chords

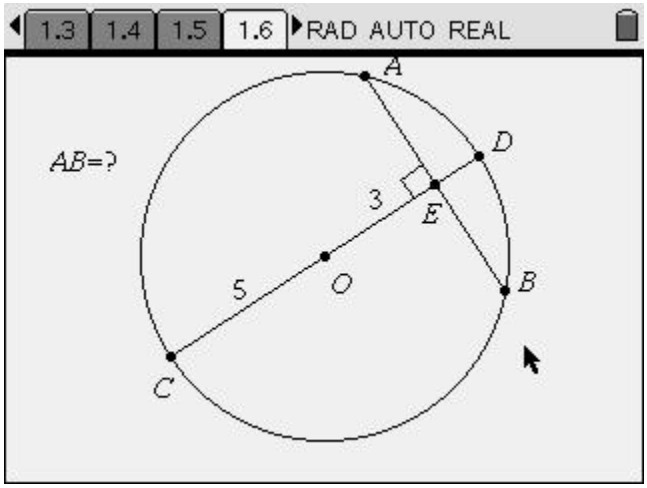
1.4



1.5



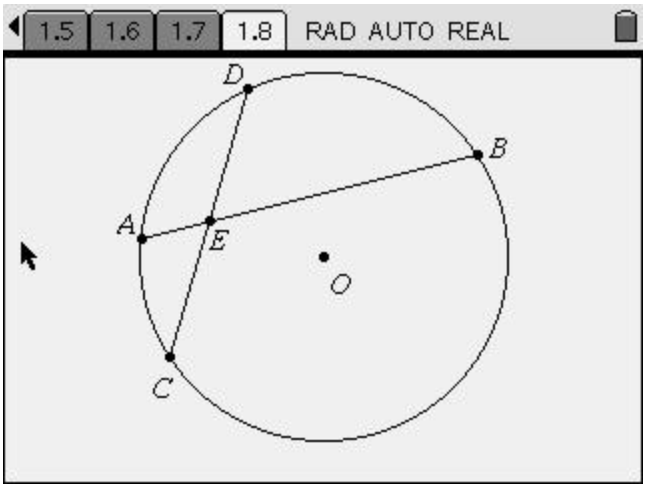
1.6



Segments Formed by Chords **Name _____**

Geometric Proof

On page 1.8, you are presented with a 2-column proof of the theorem. Complete the theorem by filling in the missing items in both the Statements and Reasons columns.



STATEMENTS	REASONS
1. Circle O with chords AB and CD, that intersect at E.	1. Given
2. m ∠AEC = m ∠BED	2.
3. m ∠BDC = m ∠CAB	3.
4. ΔAEC ~ ΔBED	4.
5.	5. Corresponding sides in similar triangles are proportionate.
6. AE * BE = CE * DE	6. Product of means equals .