Arcs and Central Angles of Circles

STUDENT ACTIVITY

Name _____

Period _____

Date _____

> ➢ Open the TI-Nspire document *arcs and central angles of circles.tns*.
> ➢ Press ⬡ctrl ▶ and move to page 1.2 to begin the lesson.

Page 1.2

Using the angle measurement tool, find the measure of the angle between each number on the face of a clock with the center of the circle as the vertex of the angle. (That is, how many degrees are there between the 12 and the 1, between the 1 and the 2, and so forth?)

How many degrees are there between each of the numbers on the face of a clock?

between 12 and 1 _____   between 4 and 5 _____   between 8 and 9 _____

between 1 and 2 _____   between 5 and 6 _____   between 9 and 10 _____

between 2 and 3 _____   between 6 and 7 _____   between 10 and 11 _____

between 3 and 4 _____   between 7 and 8 _____   between 11 and 12 _____

What is the total number of degrees? _____

Page 1.3

Using the angle measurement tool, move clockwise around the face of a clock.

How many degrees are between 12 o'clock and 3 o'clock? _____

between 3 and 6? _____   between 6 and 9? _____   between 9 and 12? _____

What is the total number of degrees? _____

Page 1.4

Using the angle measurement tool, move clockwise around the face of a clock.

How many degrees are between 12 o'clock and 6 o'clock? _____

between 6 o'clock and 12 o'clock? _____

What is the total number of degrees? _____

Page 1.5

On pages 1.2 - 1.4, you have been finding central angles of the clock face. A **central angle** is an angle whose vertex is the center of the circle.

The arc between the numbers is a **circle arc**. **Minor arcs** are formed when the measure of the central angle is less than 180°. A **major arc** is that part of the circle that is not a minor arc.

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Grab the open point and move it around the circle. Notice the major arcs and the minor arcs.

Identify the minor arc and major arc of the circles. Check your answers by choosing:

(menu) Check answers

Measure the remaining angles to verify that they are the same measure as $\angle AOB$.

Arc AB is one-sixth (60/360) of the total circle.

To find the length of arc AB

find the circumference of the circle _____

multiply the circumference by 1/6 _____

Find the length of arc AC

arc AC is what part of the total circle? _____

multiply by circumference _____

Find the length of arc AD

arc AD is what part of the total circle? _____

multiply by circumference _____

How do you think you would find the measure of the major arcs?

_____

_____