

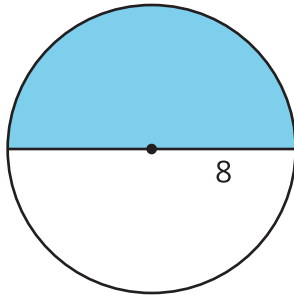
Unit 7 Lesson 8: Arcs and Sectors

1 Math Talk: Fractions of a Circle (Warm up)

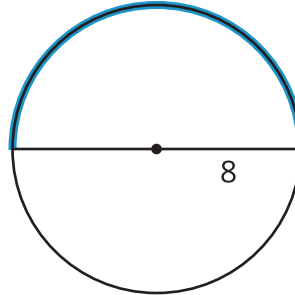
Student Task Statement

Evaluate each problem mentally.

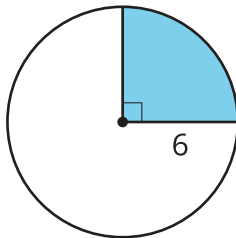
- Find the area of the shaded portion of the circle.



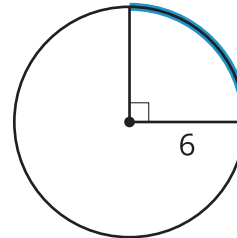
- Find the length of the highlighted portion of the circle's circumference.



- Find the area of the shaded portion of the circle.



- Find the length of the highlighted portion of the circle's circumference.

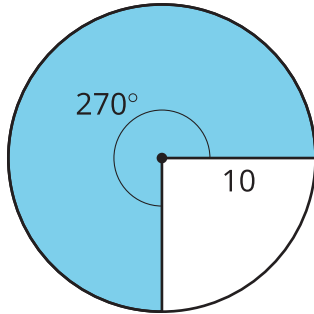


2 Sector Areas and Arc Lengths

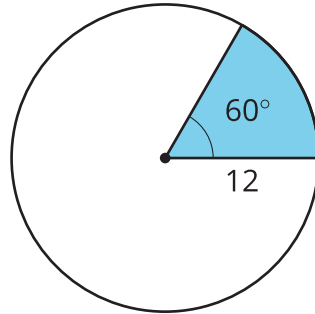
Student Task Statement

A sector of a circle is the region enclosed by 2 radii.

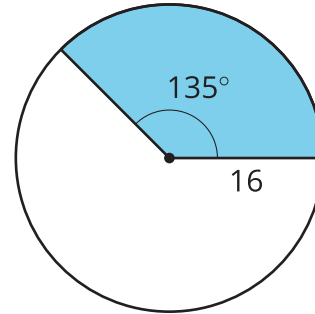
A



B

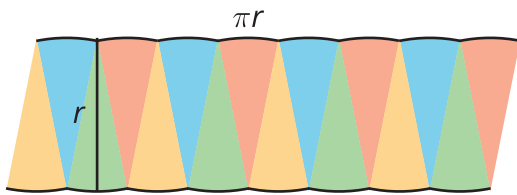
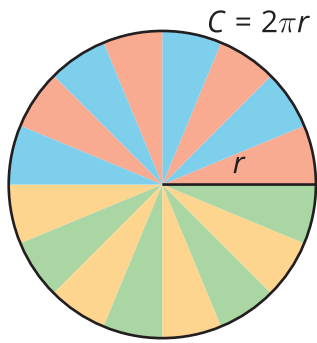


C



For each circle, find the area of the shaded sector and the length of the arc that outlines the sector. All units are centimeters. Give your answers in terms of π .

Activity Synthesis

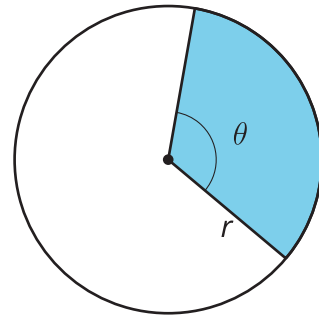


3 Build a Method

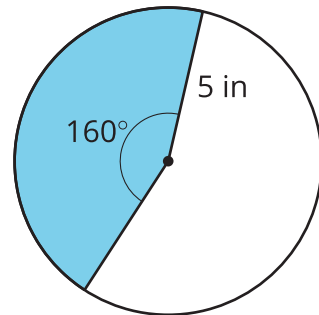
Student Task Statement

Mai says, "I know how to find the area of a sector or the length of an arc for central angles like 180 degrees or 90 degrees. But I don't know how to do it for central angles that make up more complicated fractions of the circle."

1. In the diagram, the sector's central angle measures θ degrees and the circle's radius is r units. Use the diagram to tell Mai how to find the *area of a sector* and the *length of an arc* for any angle and radius measure.



2. This image shows a circle with radius and central angle measurements. Find the area of the shaded sector, and the length of the arc defined by the sector.



Images for Activity Synthesis

