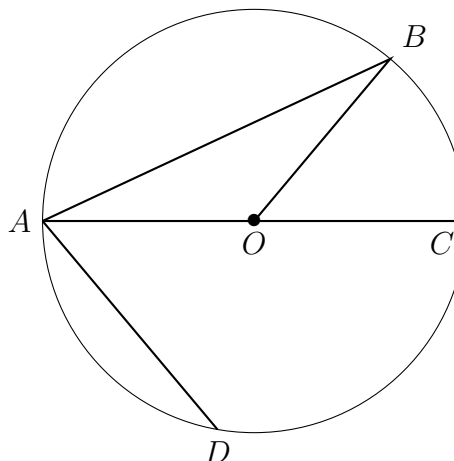


Name:

### 11.1 Homework: Circle arcs, sectors, central angles

1. Given circle  $O$  with various internal line segments as shown.

- (a) Highlight each radius in red
- (b) Highlight any chords in yellow
- (c) Is the  $\angle CAD$  an inscribed angle or a central angle?
- (d) Is  $\triangle AOB$  an equilateral triangle, isosceles triangle, or a scalene triangle?



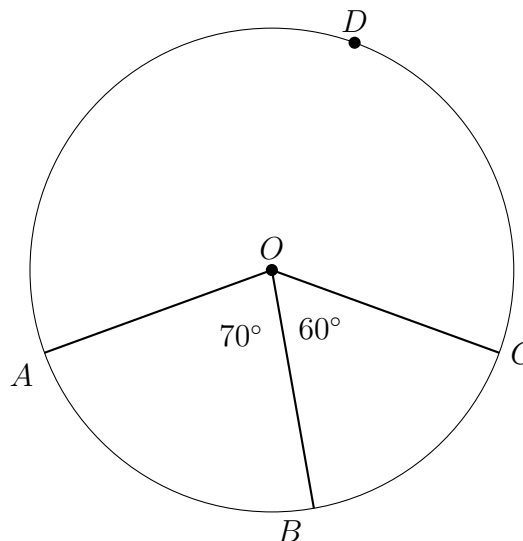
2. Given circle  $O$  with points on the circle  $A, B, C, D$  as shown. Find each central angle measure.

(a)  $m\angle AOB =$

(b)  $m\angle BOC =$

(c)  $m\angle AOC =$

- (d) What is the measure of the *reflex angle*  $m\angle AOC =$ , i.e. the one containing point  $D$  that is  $> 180^\circ$



3. Lesson: Any portion of the circumference of a circle is called an *arc* and written  $\widehat{AB}$ . A *sector* is part of a circle ("pie slice") bounded by two radii and an arc.

- (a) Highlight arc  $\widehat{AB}$ .

If  $m\angle AOB = 60^\circ$ , what is the  $m\widehat{AB}$ ?

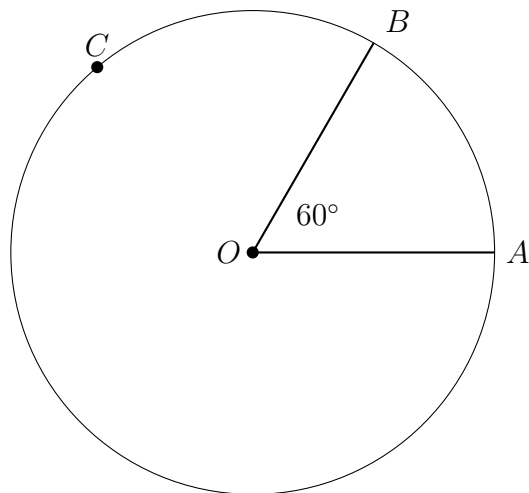
- (b) An arc's degree measure equals its corresponding central angle measure.

- (c) A *semicircle* is half of a circle.

- (d) An arc smaller than half a circle is a

*minor* arc, one larger is a *major* arc.

Which is a major arc,  $\widehat{AB}$  or  $\widehat{ACB}$ ?

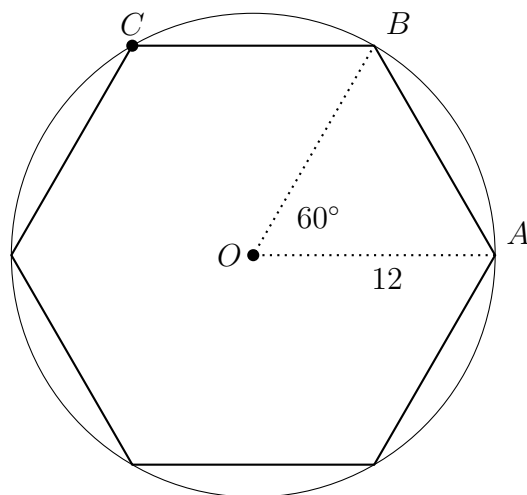


4. A regular hexagon is inscribed in a circle with a radius  $r = 12$ , as shown.

- (a) Find the circumference of the circle in terms of  $\pi$ . ( $C = 2\pi r$ )

from point A to C,  $m\widehat{AC}$ ?

- (b) How long is the curved part of the circle from point A to B,  $\widehat{AB}$ ?



- (c) What is the degree measure of the arc

5. A regular pentagon is inscribed in a circle with a radius  $r = 10$ , as shown.

- (a) Find the circle's area in terms of  $\pi$ . ( $A = \pi r^2$ )

- (c) What is the area of the sector bounded by  $\overline{AO}$ ,  $\overline{BO}$ , and  $\widehat{AB}$ ?

- (b) What is the degree measure of the central angle  $\angle AOB$ ?

Name:

