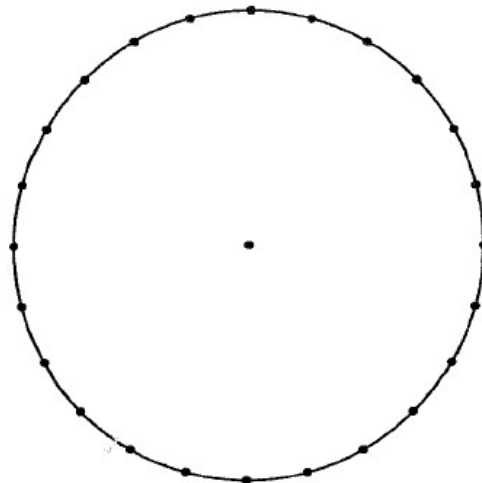


Name: _____

There are 24 dots on each circle, which will help you find the measure of the arcs (think about it...).

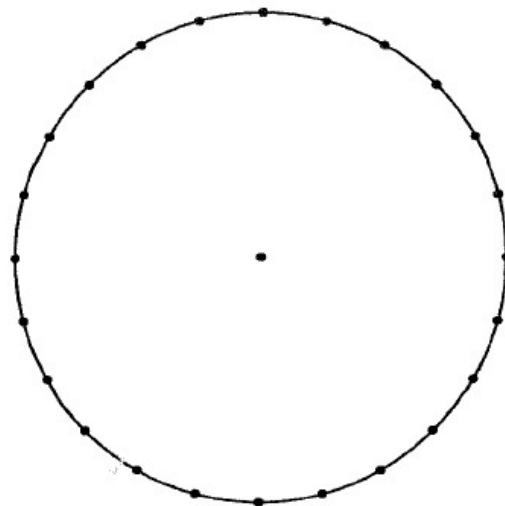
- On the circle to the right, draw two congruent chords (do not make them diameters)
 - Put tick marks on the congruent chords
- Draw the radii from the endpoints of the chords
- Use a protractor to measure the central angles created by the chords.
 - What do you notice about their measures?
- Using the dots, figure out the measure of the arcs created by the above central angles
 - What do you notice about their measures?



1) If two chords in a circle are congruent, then they determine two central angles that are _____.

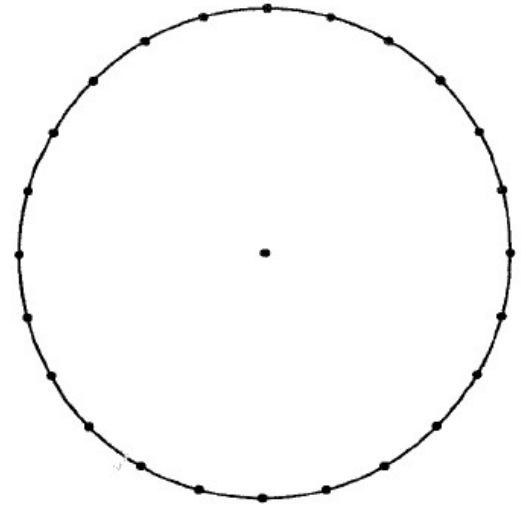
2) If two chords in a circle are congruent, then the minor arcs created by those chords are _____.

- On the circle to the right, draw a chord that is not the diameter.
 - Name the endpoints A and B .
- Draw a radius of the circle passing through the midpoint of the chord.
 - Include tick marks on the chord
 - Name the center of the circle C and the other endpoint of the radius D .
 - Name the intersection of the chord and the radius E .
- Measure $\angle CEA$.
 - What does that mean segment CD is?



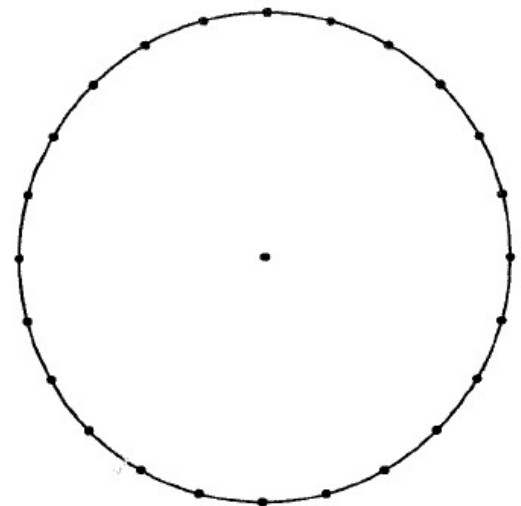
3) The bisector of a chord is _____ to the chord.

- Draw two congruent chords in the circle to the right (not diameters)
- Measure the *perpendicular* distance from each chord to the center of the circle.
 - What do you notice about those distances?



4) Two congruent chords in a circle are _____ from the center of the circle.

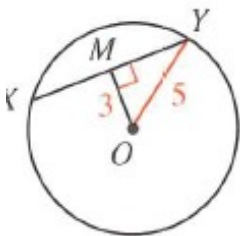
- Draw a chord on the circle to the right
- Draw the perpendicular bisector of the chord.
- What point does the perpendicular bisector pass through?



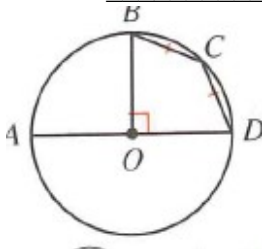
5) The perpendicular bisector of a chord passes through the _____ of the circle.

In the diagrams that follow, O is the center of the circle.

1) $XY =$ _____

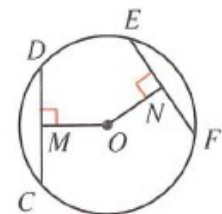


2) $m\widehat{CD} =$ _____



3) $OM = ON = 7$

$CM = 6$; $EF =$ _____



4) Sketch a circle O with radius 10 and chord \overline{XY} 8 cm long. How far is the chord from O ?

5) Sketch a circle Q with a chord \overline{RS} that is 16 cm long and 2 cm from Q . What is the radius of circle Q ?