

4. Now it is time to use some of the terminology you have learned. Consider the following two theorems:

In the same circle or congruent circles, if two chords are congruent, their intercepted arcs are congruent.

In the same circle or congruent circles, if two arcs are congruent, then their chords are congruent.

- Prove that each of the theorems is true.
- Write the two theorems as one biconditional statement.

Mathematics II
Relationships among Central Angles, Arcs, and Chords
Day 1 Homework

- In $\odot P$, radii \overline{PA} , \overline{PB} , and chord \overline{AB} are drawn. $PA = 2x + 3$, $PB = 3x - 7$, and $AB = 43 - 2x$.
 - Draw a sketch to illustrate the given information.
 - Find the measure of \widehat{AB} . Show how you know.
- In $\odot P$, radii \overline{PA} and \overline{PB} are drawn. $PA = \frac{3}{2}x - 2$ and $PB = x - 10$.
 - Draw a sketch to illustrate the given information.
 - Find the length of a diameter of the circle.
- In $\odot P$, radii \overline{PA} and \overline{PB} are drawn. If radius \overline{PC} bisects $\angle APB$, prove that $\overline{AC} \cong \overline{BC}$.