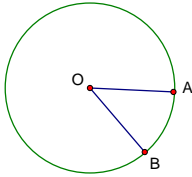
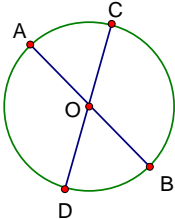
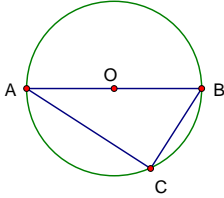
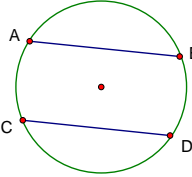
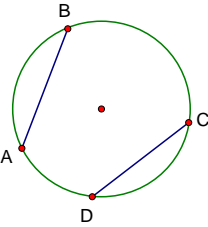
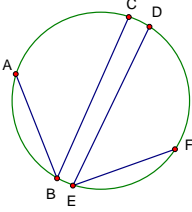
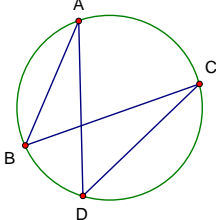


Circle Theorems for Proofs

Theorem	Picture
All radii in a circle are congruent.	 $\overline{OA} \cong \overline{OB}$
All diameters in a circle are congruent.	 $\overline{AB} \cong \overline{CD}$
If an inscribed angle intercepts a semi-circle, then it is a right angle.	 $\angle ACB$ is a right angle
If lines are parallel in a circle, then the arcs they intercept are congruent.*	 <p>If $\overline{AB} \parallel \overline{CD}$ Then $\widehat{AC} \cong \widehat{BD}$</p>
If chords intercept congruent arcs, then chords are congruent.*	 <p>If $\widehat{AB} \cong \widehat{CD}$ Then $\overline{AB} \cong \overline{CD}$</p>
If inscribed angles are congruent, then the arcs they intercept are congruent.*	 <p>If $\angle ABC \cong \angle DEF$ Then $\widehat{AC} \cong \widehat{DF}$</p>
If inscribed angles intercept the same arc, then the angles are congruent.	 $\angle ABC \cong \angle ADC$

* = converse is also true.

Theorem	Picture
<p>If a radius (or diameter) is perpendicular to a chord, then the radius (or diameter) bisects the chord and the intercepted arc.*</p>	<div data-bbox="862 142 1068 361"> </div> <div data-bbox="1149 170 1356 338"> <p>If $\overline{OC} \perp \overline{AB}$ then $\overline{AE} \cong \overline{EB}$ and $\widehat{AC} \cong \widehat{CB}$</p> </div>
<p>If chords are congruent, then they are equidistant from the center.*</p>	<div data-bbox="862 382 1068 583"> </div> <div data-bbox="1154 430 1365 548"> <p>If $\overline{AB} \cong \overline{DC}$ then $\overline{OF} \cong \overline{OE}$</p> </div>
<p>If a radius is drawn to a tangent, then the radius and tangent are perpendicular.</p>	<div data-bbox="862 632 1133 821"> </div> <div data-bbox="1182 653 1393 810"> <p>If \overline{AB} is a tangent then $\overline{OB} \perp \overline{AB}$</p> </div>
<p>If tangent segments are drawn to a circle from an external point, then the tangents are congruent.</p>	<div data-bbox="862 852 1166 1073"> </div> <div data-bbox="1187 873 1393 1031"> <p>If \overline{AB} and \overline{CB} are tangents then $\overline{AB} \cong \overline{CB}$</p> </div>
<p>If two tangents are drawn to a circle from an external point and a line connects the point to the center of the circle, then that line bisects the angle formed by the two tangents.</p>	<div data-bbox="862 1094 1166 1314"> </div> <div data-bbox="1195 1188 1406 1230"> <p>$\angle ABO \cong \angle CBO$</p> </div>
<p>If central angles are congruent then their chords are congruent.*</p>	<div data-bbox="854 1346 1101 1566"> </div> <div data-bbox="1195 1388 1393 1545"> <p>If $\angle AOB \cong \angle DOC$ Then $\overline{AB} \cong \overline{DC}$</p> </div>

* = converse is also true.