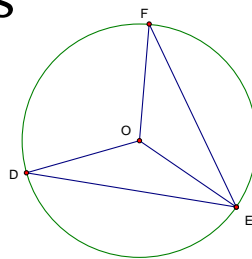# Circle Proofs

1.

Given: In circle O, $\overline{DE} \cong \overline{FE}$

Prove: $\triangle DOE \cong \triangle FOE$
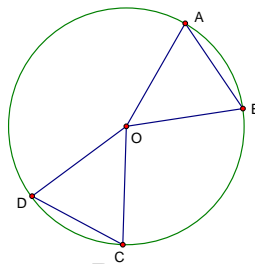

Statements	Reasons

2.

Given: Circle O with $\overset{\frown}{AB} \cong \overset{\frown}{CD}$

Prove: $\triangle ABO \cong \triangle CDO$

Statements	Reasons

3.

Given: Circle O with $\overset{\frown}{AB} \cong \overset{\frown}{CD}$

Prove: $AD \cong CB$
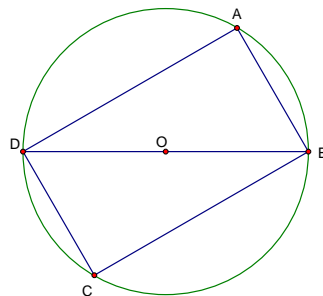
Statements	Reasons

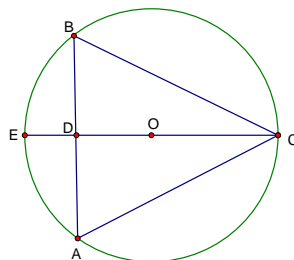**4.**

Given: In circle O, $\overline{EC} \perp \overline{AB}$

Prove: $\triangle ABC$ is isosceles

Statements	Reasons

5.

Given: Circle O, $\overline{BD} \perp \overline{AC}$

Prove: $\triangle ABC \sim \triangle BDC$
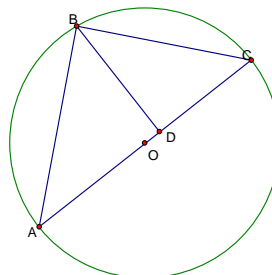
Statements	Reasons

6.

Given: Circle O

Prove: $(AC)(CE) = (CB)(DC)$
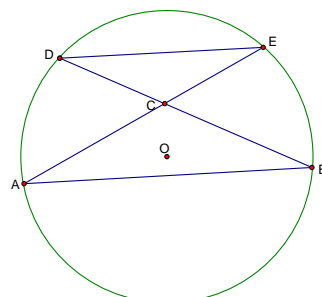
Statements	Reasons

7.

Given: ΔPQR is inscribed in circle O

$\overline{PQ} \cong \overline{PR}$

Prove: $\overset{\frown}{PQR} \cong \overset{\frown}{PRQ}$
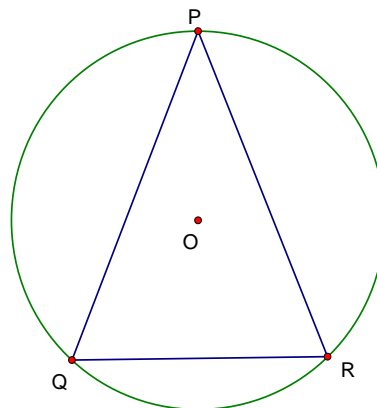
Statements	Reasons

8.

Given: $\overline{AC}$ and $\overline{BC}$ tangent to circle O

at A and B respectively

Prove: $\overset{\frown}{AD} \cong \overset{\frown}{DB}$
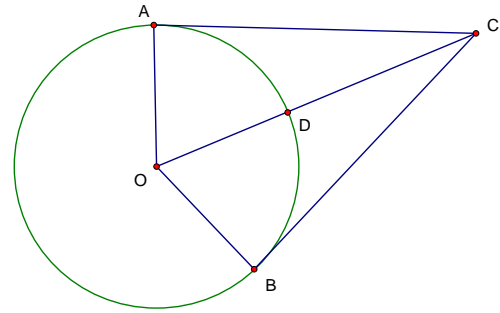
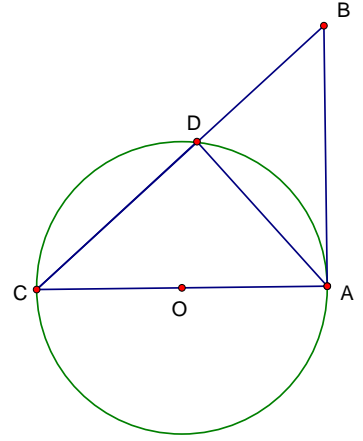| Statements	Reasons

9.

Given: Tangent $\overrightarrow{AB}$ and secant $\overrightarrow{BDC}$ intersect at B outside circle O

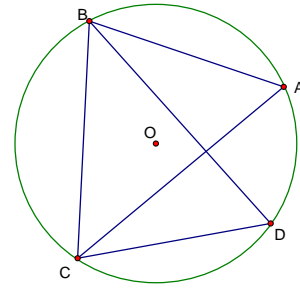$\overline{AOC}$ is a diameter, $\overline{AD}$ is a chord

Prove: $\triangle ABC \sim \triangle DAC$

Statements	Reasons

10.

Given: Chords $\overline{AC}$ and $\overline{BD}$ of circle O intersect at E

$\overparen{AB} \cong \overparen{CD}$

Prove: $\triangle ABC \cong \triangle DCB$

Statements	Reasons

11.

Given: Diameters $\overline{AC}$ and $\overline{BD}$ intersect at O

Prove: $\triangle ABC \cong \triangle DCB$
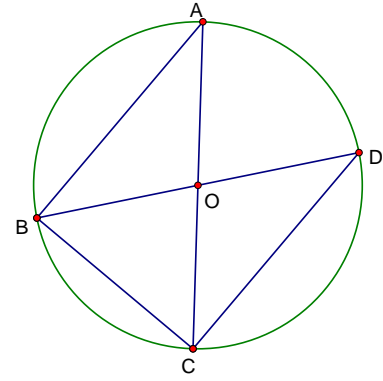
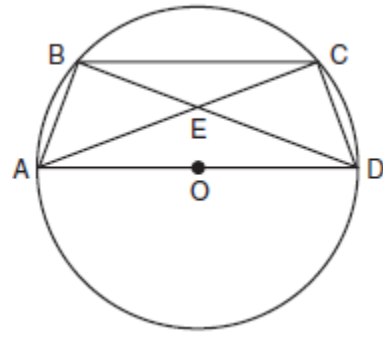| Statements	Reasons

12.

Given: $\overline{AD} \parallel \overline{BC}$

Prove: $\overline{BE} \cong \overline{CE}$

Statements	Reasons

13.

Given: $\overline{AB} \parallel \overline{DC}$

Prove: $\triangle ACD \cong \triangle BDC$
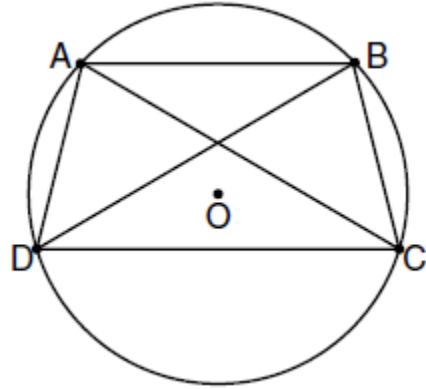
Statements	Reasons

14.

Given: $\overset{\frown}{BR} \cong \overset{\frown}{YD}$

Prove: $\triangle RBD \cong \triangle YBD$
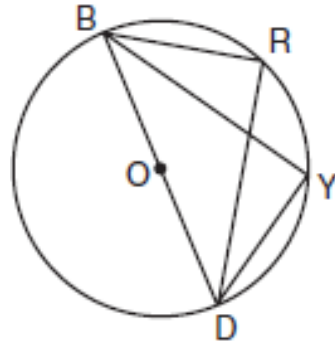
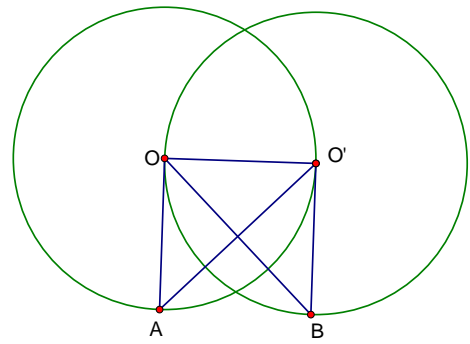| Statements	Reasons

15.

Given: O' on circle O, and O on circle O'

$\overline{OA} \perp \overline{OO'}$ and $\overline{OB} \perp \overline{OO'}$

Prove: $\overline{AO'} \cong \overline{BO}$

Statements	Reasons