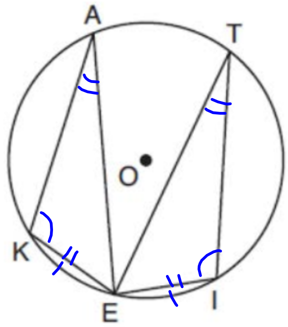
DO NOW

In the diagram below of circle O, points K, A, T, I, and E are on the circle, $\triangle KAE$ and $\triangle ITE$ are drawn, $\overset{\frown}{KE} \cong \overset{\frown}{EI}$, and $\angle EKA \cong \angle EIT$.

Which statement about $\triangle KAE$ and $\triangle ITE$ is always true?

congruent by AAS



1) They are neither congruent nor similar.
2) They are similar but not congruent.
3) They are right triangles.
4) They are congruent.

May 8-8:02 AM

Similarity Circle Proofs

REMEMBER: To prove triangles SIMILAR (~), use Angle-Angle (AA)

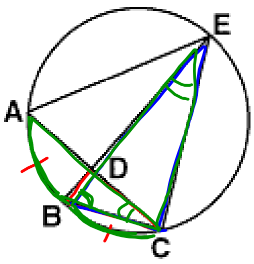
If the triangles are similar, then use corresponding sides to prove a PROPORTION

Once you set up a proportion, you can use it to prove that CROSS PRODUCTS are equal

Apr 6-10:07 AM

Given: B is the midpoint of $\overset{\frown}{AC}$

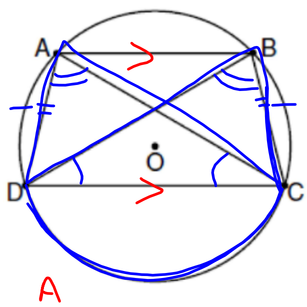
Prove: $\triangle DBC \sim \triangle CBE$



Statement	Reason
1. B is the midpoint of $\overset{\frown}{AC}$	1. Given
2. $\overset{\frown}{AB} \cong \overset{\frown}{BC}$	2. Definition of midpoint
3. $\angle B \cong \angle B$	3. Reflexive Property
4. $\angle ACB \cong \angle BEC$	4) Inscribed ∠'s that intercept ≅ arcs are ≅
5. $\Delta DBC \sim \Delta CBE$	5. AA

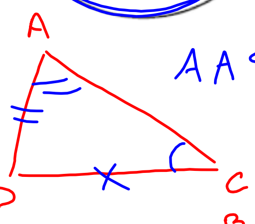
Apr 6-11:43 AM

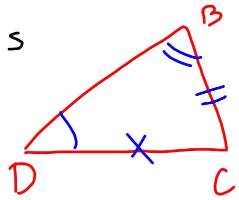
In the diagram below, quadrilateral $ABCD$ is inscribed in circle O, $\overline{AB} \parallel \overline{DC}$, and diagonals $\overline{AC}$ and $\overline{BD}$ are drawn. Prove that $\Delta ACD \cong \Delta BDC$.



Statement	Reason
1) $\overline{AB} \parallel \overline{DC}$	1) Given
2) $\overset{\frown}{AD} \cong \overset{\frown}{BC}$	2) Parallel chords intercept ≅ arcs
3) $\overline{AD} \cong \overline{BC}$	3) Congruent arcs have ≅ chords
4) $\angle BDC \cong \angle ACD$	4) Inscribed ∠'s that intercept ≅ arcs are ≅
5) $\angle DAC \cong \angle CBD$	5) Inscribed ∠'s that intercept the same arc are ≅
6) $\Delta ACD \cong \Delta BDC$	6) AAS

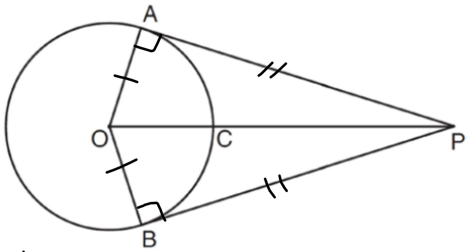
AAS





May 8-8:13 AM

In the diagram below, $\overline{PA}$ and $\overline{PB}$ are tangent to circle O, $\overline{OA}$ and $\overline{OB}$ are radii, and $\overline{OP}$ intersects the circle at C. Prove: $\angle AOP \cong \angle BOP$



Statement	Reason
1) $\overline{PA}$ and $\overline{PB}$ are tangents to circle O, $\overline{OA}$ + $\overline{OB}$ are radii	1) Given
2) $\overline{PA} \perp \overline{OA}$, $\overline{PB} \perp \overline{OB}$	2) Tangent and radius of a circle are $\perp$ at point of tangency
3) $\angle A$ + $\angle B$ are right $\angle$'s	3) $\perp$ lines form right $\angle$'s
4) $\angle A \cong \angle B$	4) All right $\angle$'s are $\cong$
5) $\overline{OA} \cong \overline{OB}$	5) All radii in a circle are $\cong$
6) $\overline{PA} \cong \overline{PB}$	6) Tangents to a circle from the same external point are $\cong$
7) $\triangle AOP \cong \triangle BOP$	7) SAS
8) $\angle AOP \cong \angle BOP$	8) CPCTC

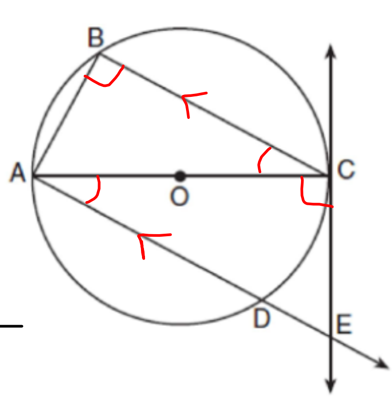
SAS

May 8-8:17 AM

In the diagram below of circle O, tangent $\overleftrightarrow{EC}$ is drawn to diameter $\overline{AC}$. Chord $\overline{BC}$ is parallel to secant $\overline{ADE}$, and chord $\overline{AB}$ is drawn.

Prove: $\frac{BC}{CA} = \frac{AB}{EC}$

$\triangle BAC \sim \triangle EAC$



Statement	Reason

May 8-8:19 AM