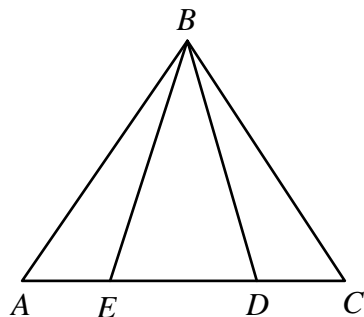


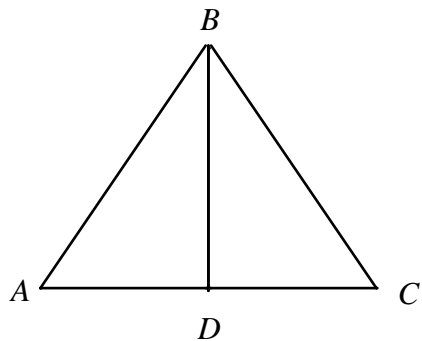
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P.I. G.G.28: Determine the congruence of two triangles by using one of the five congruence techniques (SSS, SAS, ASA, AAS, HL), given sufficient information about the sides and/or angles of two congruent triangles

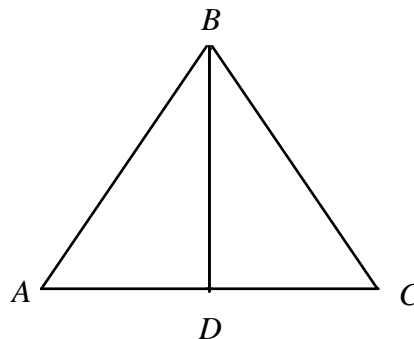
1. Given: $\overline{BE} \cong \overline{ED}$; $\overline{AE} \cong \overline{CD}$
Prove: $\triangle ABC$ is isosceles



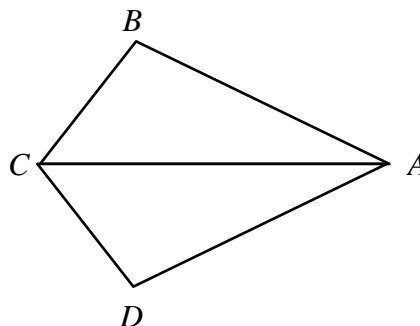
2. Given: \overline{BD} bisects \overline{AC} , $\overline{AB} \cong \overline{BC}$
Prove: $\angle C \cong \angle A$



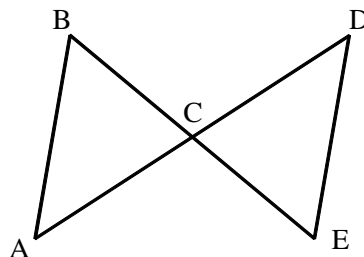
3. Given: \overline{BD} is the median to \overline{AC} ,
 $\overline{AB} \cong \overline{BC}$
Prove: $\angle CBD \cong \angle ABD$



4. Given: $\angle DCA \cong \angle BCA$, $\angle B \cong \angle D$
Prove: $\overline{AB} \cong \overline{AD}$

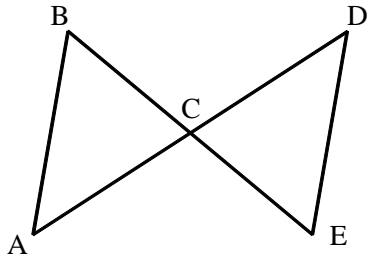


5. Given: $\overline{BC} \cong \overline{EC}$ and $\overline{AC} \cong \overline{DC}$
Prove: $\overline{BA} \cong \overline{ED}$

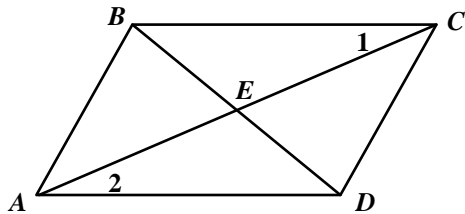


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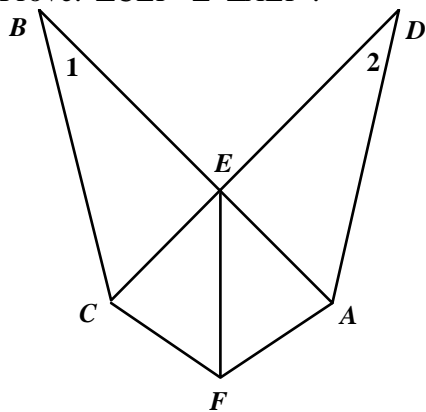
6. Given: $\angle A \cong \angle D$ and $\overline{AC} \cong \overline{DC}$
Prove: $\overline{BC} \cong \overline{EC}$



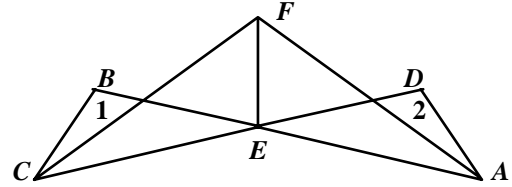
7. Given: $\overline{BC} \cong \overline{DA}$, $\angle 1 \cong \angle 2$. Prove:
 $\triangle BEA \cong \triangle DEC$.



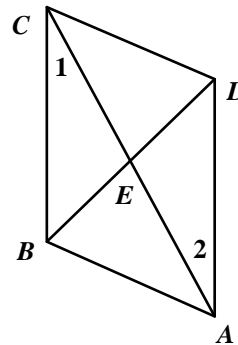
8. Given:
 $\overline{BC} \cong \overline{DA}$, $\angle 1 \cong \angle 2$, and $\overline{CF} \cong \overline{AF}$.
Prove: $\triangle CEF \cong \triangle AEF$.



9. Given:
 $\overline{BC} \cong \overline{DA}$, $\angle 1 \cong \angle 2$, and $\overline{CF} \cong \overline{AF}$.
Prove: $\triangle CEF \cong \triangle AEF$.



10. Given: $\overline{BC} \cong \overline{DA}$, $\angle 1 \cong \angle 2$. Prove:
 $\triangle BEA \cong \triangle DEC$.



1. $\overline{BE} \cong \overline{BD}$	1. Given
2. $\angle BED \cong \angle BDE$	2. If 2 sides of a Δ are \cong , the \angle s opp. are \cong .
3. $\angle BEA \cong \angle BDC$	3. If \angle s are supp. to $\cong \angle$ s, they are \cong .
4. $\overline{AE} \cong \overline{CD}$	4. Given
5. $\triangle ABE \cong \triangle CBD$	5. SAS
6. $\overline{AB} \cong \overline{CB}$	6. CPCTC
[1] 7. $\triangle ABC$ is isosceles	7. If at least 2 sides of a Δ are \cong , the Δ is isosc.

1. \overline{BD} bisects \overline{AC} , $\overline{AB} \cong \overline{BC}$	1. Given
2. $\overline{AD} \cong \overline{CD}$	2. Definition of a bisector
3. $\overline{BD} \cong \overline{BD}$	3. Reflexive
4. $\triangle ADB \cong \triangle CDB$	4. SSS
[2] 5. $\angle C \cong \angle A$	5. CPCTC

1. \overline{BD} is the median to \overline{AC} , $\overline{AB} \cong \overline{BC}$	1. Given
2. $\overline{AD} \cong \overline{CD}$	2. Definition of a median
3. $\overline{BD} \cong \overline{BD}$	3. Reflexive
4. $\triangle ADB \cong \triangle CDB$	4. SSS
[3] 5. $\angle CBD \cong \angle ABD$	5. CPCTC

1. $\angle DCA \cong \angle BCA$, $\angle B \cong \angle D$	1. Given
2. $\overline{AC} \cong \overline{AC}$	2. Reflexive
3. $\triangle ABC \cong \triangle ADC$	3. AAS
[4] 4. $\overline{AB} \cong \overline{AD}$	4. CPCTC

1. $\overline{BC} \cong \overline{EC}$ $\overline{AC} \cong \overline{DC}$	1. Given
2. $\angle BCA \cong \angle ECD$	2. Vertical Angles
3. $\triangle BCA \cong \triangle ECD$	3. SAS
[5] 4. $\overline{BA} \cong \overline{ED}$	4. CPCTC

1. $\angle A \cong \angle D$ $\overline{AC} \cong \overline{DC}$	1. Given
2. $\angle BCA \cong \angle ECD$	2. Vertical Angles
3. $\triangle BCA \cong \triangle ECD$	3. ASA
[6] 4. $\overline{BC} \cong \overline{EC}$	4. CPCTC

- $\angle BEC \cong \angle DEA$ by vertical angles. $\triangle BEC \cong \triangle DEA$ by AAS. Then by CPCTC,
 [7] $\overline{BE} \cong \overline{DE}$, and $\overline{AE} \cong \overline{CE}$. $\angle BEA \cong \angle DEC$ by vertical angles, so $\triangle BEA \cong \triangle DEC$ by SAS.
-
- $\angle BEC \cong \angle DEA$ by vertical angles. $\triangle BEC \cong \triangle DEA$ by AAS. Then by CPCTC,
 [8] $\overline{CE} \cong \overline{AE}$. $\overline{EF} \cong \overline{EF}$ by the Reflexive Property. So $\triangle CEF \cong \triangle AEF$ by SSS.
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- $\angle BEC \cong \angle DEA$ by vertical angles. $\triangle BEC \cong \triangle DEA$ by AAS. Then by CPCTC,
 [9] $\overline{CE} \cong \overline{AE}$. $\overline{EF} \cong \overline{EF}$ by the Reflexive Property. So $\triangle CEF \cong \triangle AEF$ by SSS.
-
- $\angle BEC \cong \angle DEA$ by vertical angles. $\triangle BEC \cong \triangle DEA$ by AAS. Then by CPCTC,
 [10] $\overline{BE} \cong \overline{DE}$, and $\overline{AE} \cong \overline{CE}$. $\angle BEA \cong \angle DEC$ by vertical angles, so $\triangle BEA \cong \triangle DEC$ by SAS.
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