

Name: _____

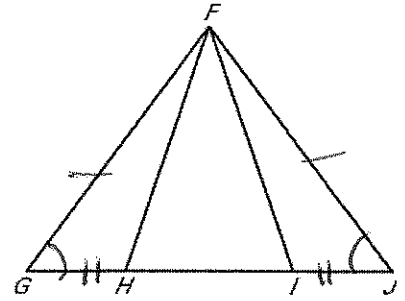


Aim#39: 4.7 How can we use our knowledge of isosceles and equilateral triangles to use their properties in proofs?

Guiding Questions	Notes/Diagrams/Illustrations																		
<p>Describe an isosceles and equilateral triangle.</p> <p>How do I prove a triangle is isosceles?</p>	<div data-bbox="609 277 841 571"></div> <div data-bbox="1112 298 1429 604"></div> <div data-bbox="1396 304 1599 514"><p>* all angles = 60°</p></div> <div data-bbox="438 577 1104 745"><p>if 2 sides \cong then 2 \angle \cong if 2 \angle \cong then 2 sides \cong</p></div> <div data-bbox="402 814 885 907"><p>1. Given: \overline{BD} bisects $\angle ADC$, $\overline{DB} \perp \overline{AC}$ Prove: $\triangle ADC$ is isosceles</p></div> <div data-bbox="1169 703 1453 1060"></div>																		
	<table border="1"><thead><tr><th data-bbox="394 1123 889 1176">Statements</th><th data-bbox="889 1123 1594 1176">Reasons</th></tr></thead><tbody><tr><td data-bbox="394 1176 889 1249">1. \overline{BD} bisects $\angle ADC$.</td><td data-bbox="889 1176 1594 1249">1. Given</td></tr><tr><td data-bbox="394 1249 889 1323">2. $\angle 1 \cong \angle 2$</td><td data-bbox="889 1249 1594 1323">2. Definition of Angle Bisector</td></tr><tr><td data-bbox="394 1323 889 1396">3. $\overline{DB} \perp \overline{AC}$</td><td data-bbox="889 1323 1594 1396">3. Given</td></tr><tr><td data-bbox="394 1396 889 1470">4. $\angle 3 \cong \angle 4$</td><td data-bbox="889 1396 1594 1470">4. if \perp then 90</td></tr><tr><td data-bbox="394 1470 889 1543">5. $\overline{DB} \cong \overline{DB}$</td><td data-bbox="889 1470 1594 1543">5. reflexive</td></tr><tr><td data-bbox="394 1543 889 1617">6. $\triangle CBD \cong \triangle ABD$</td><td data-bbox="889 1543 1594 1617">6. ASA Congruence Postulate</td></tr><tr><td data-bbox="394 1617 889 1690">7. $\overline{DC} \cong \overline{DA}$</td><td data-bbox="889 1617 1594 1690">7. Corresponding parts of \cong triangles are \cong.</td></tr><tr><td data-bbox="394 1690 889 2074">8. $\triangle ADC$ is isosceles.</td><td data-bbox="889 1690 1594 2074">8. if 2 \cong then isosceles</td></tr></tbody></table>	Statements	Reasons	1. \overline{BD} bisects $\angle ADC$.	1. Given	2. $\angle 1 \cong \angle 2$	2. Definition of Angle Bisector	3. $\overline{DB} \perp \overline{AC}$	3. Given	4. $\angle 3 \cong \angle 4$	4. if \perp then 90	5. $\overline{DB} \cong \overline{DB}$	5. reflexive	6. $\triangle CBD \cong \triangle ABD$	6. ASA Congruence Postulate	7. $\overline{DC} \cong \overline{DA}$	7. Corresponding parts of \cong triangles are \cong .	8. $\triangle ADC$ is isosceles.	8. if 2 \cong then isosceles
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How can I use CPCTC and isosceles properties in proofs?

2. Given: $\overline{FG} \cong \overline{FJ}$, $\overline{HG} \cong \overline{IJ}$
 Prove: $\overline{HF} \cong \overline{IF}$



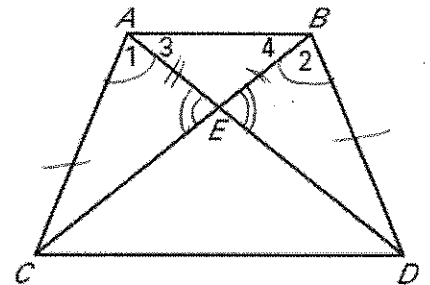
Statements

Reasons

1. $\overline{FG} \cong \overline{FJ}$
2. $\angle G \cong \angle J$
3. $\overline{HG} \cong \overline{IJ}$
4. $\triangle FGH \cong \triangle FJI$
5. $\overline{HF} \cong \overline{IF}$

1. Given
2. Base Angles Theorem
3. Given
4. SAS Congruence Postulate
5. CPCTC

3. Given: $\overline{AC} \cong \overline{BD}$, $\angle 1 \cong \angle 2$
 Prove: $\angle 3 \cong \angle 4$



Statements

Reasons

1. $\angle 1 \cong \angle 2$
2. $\overline{AC} \cong \overline{BD}$
3. $\angle AEC \cong \angle BED$
4. $\triangle AEC \cong \triangle BED$
5. $\overline{AE} \cong \overline{BE}$
6. $\angle 3 \cong \angle 4$

1. Given
2. Given
3. Vertical
4. AAS Congruence Theorem
5. CPCTC
6. if 2 side \cong then 2 $\angle \cong$

How can I use their properties in proofs?

Summary: What is one thing you learned today?