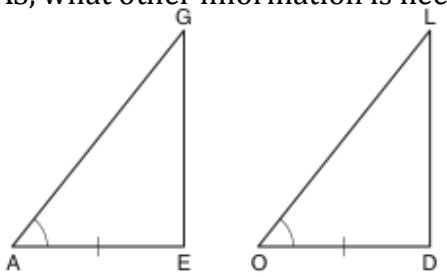
Name:__KEY_____ Date:_____ Period:_____
Triangle Proofs Test Review Ms. Cronin

Triangle Proofs Test Review

Part I: Multiple Choice

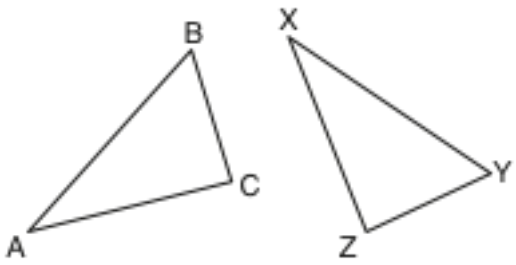
___2___ **1.** In the diagram below of ΔAGE and ΔOLD, $\angle GAE \cong \angle LOD$ and $AE \cong OD$. To prove that ΔAGE ≅ ΔOLD by SAS, what other information is needed?

(1) $GE \cong LD$
(2) $AG \cong OL$
(3) $\angle AGE \cong \angle OLD$
(4) $\angle AEG \cong \angle ODL$



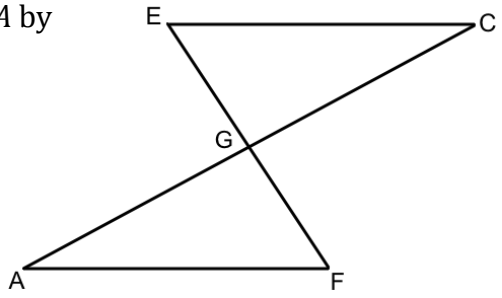
___2___ **2.** Which statements could be used to prove that ΔABC and ΔXYZ are congruent?

(1) $\overline{AB} \cong \overline{XY}, \overline{BC} \cong \overline{YZ}$, and $\angle A \cong \angle X$
(2) $\overline{AB} \cong \overline{XY}, \angle A \cong \angle X$, and $\angle C \cong \angle Z$
(3) $\angle A \cong \angle X, \angle B \cong \angle Y$, and $\angle C \cong \angle Z$
(4) $\angle A \cong \angle X, \overline{AC} \cong \overline{XZ}$, and $\overline{BC} \cong \overline{YZ}$



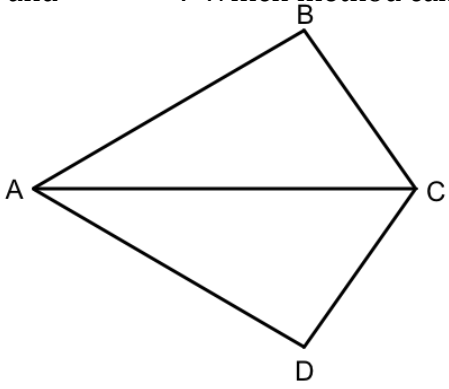
___3___ **3.** In the accompanying diagram, $\overline{EC} \cong \overline{FA}$ and $\overline{EC} \parallel \overline{FA}$. Triangle *EGC* can be proved congruent to triangle *FGA* by

(1) HL
(2) AAA
(3) AAS
(4) SSA



___1___ **4.** In the diagram below, $\overline{BA} \cong \overline{DA}$, $\overline{AB} \perp \overline{CB}$, and $\overline{AD} \perp \overline{CD}$. Which method can be used to prove $\Delta ABC \cong \Delta ADC$?

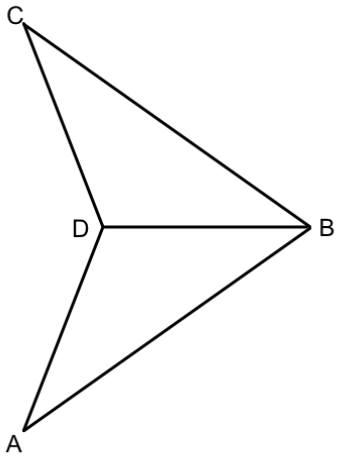
(1) HL
(2) SSS
(3) AAS
(4) SAS



Part II: Fill in the missing Statement and Reason columns. The middle column has been completed for you.

5. Given: $\overline{BA} \cong \overline{BC}$
$\overline{DA} \cong \overline{DC}$

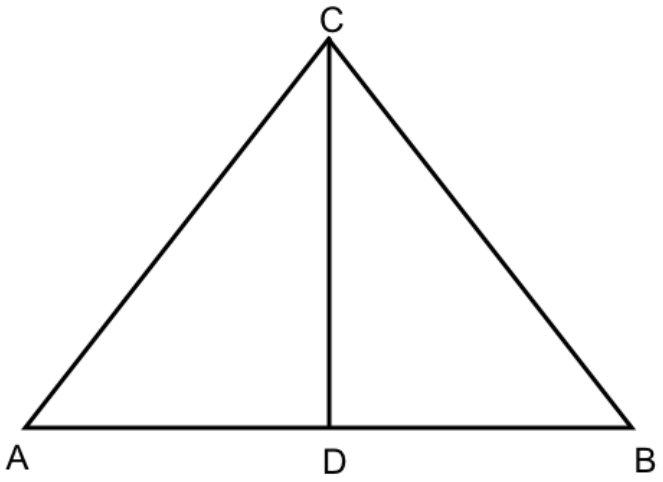
Prove: $\angle ABD \cong \angle CBD$



Statements		Reasons
1) BA ≅ BC	S	**1)** Given
2) DA ≅ DC	S	**2)** Given
3) BD ≅ BD	S	**3)** Reflexive Property
4) $\Delta ABD \cong \Delta CBD$		**4)** SSS
5) <ABD ≅ <CBD		**5)** CPCTC

6. Given: $\overline{CD}$ bisects $\overline{AB}$ at D
$\overline{CD} \perp \overline{AB}$

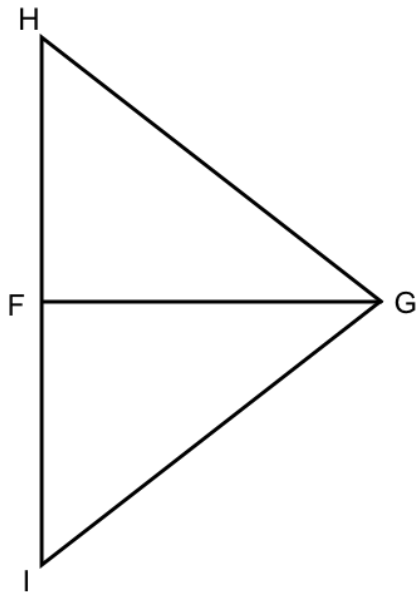
Prove: $\overline{CA} \cong \overline{CB}$



Statements		Reasons
1) CD bisects AB at D		**1)** Given
2) $\overline{AD} \cong \overline{BD}$	S	**2)** Definition of a bisector
3) CD $\perp$ AB		**3)** Given
4) $\angle CDA$ and $\angle CDB$ are right angles.		**4)** Definition of perpendicular lines
5) <CDA ≅ <CDB	A	**5)** All right angles are congruent.
6) CD ≅ CD	S	**6)** Reflexive property
7) ΔCAD ≅ ΔCBD		**7)** SAS
8) $\overline{CA} \cong \overline{CB}$		**8)** CPCTC

7. Given: $\overline{FG}$ is the perpendicular bisector of $\overline{HI}$

Prove: $\angle H \cong \angle I$

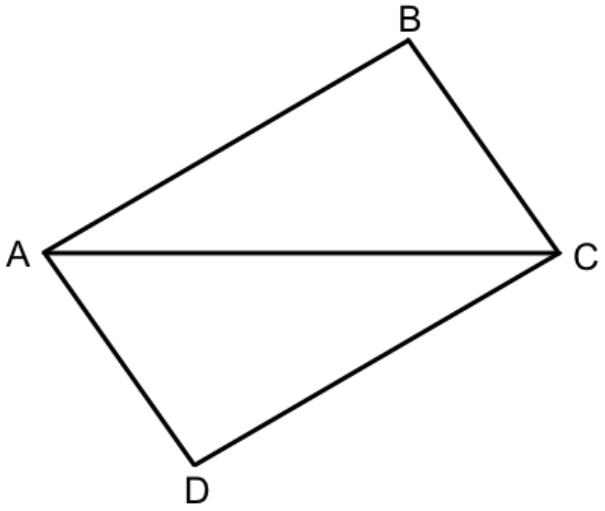


Statements		Reasons
1) FG is the perpendicular bisector of HI		**1)** Given
2) HF ≅ IF	S	**2)** Definition of a bisector
3) <HFG and <IFG are right angles		**3)** Definition of perpendicular lines
4) <HFG ≅ <IFG	A	**4)** All right angles are congruent.
5) $\overline{FG} \cong \overline{FG}$	S	**5)** Reflexive Property
6) ΔHFG ≅ ΔIFG		**6)** SAS
7) <H ≅ <I		**7)** CPCTC

Part III: Write a formal proof.

8. Given: $\overline{AB} \cong \overline{CD}$
$\overline{AD} \cong \overline{BC}$

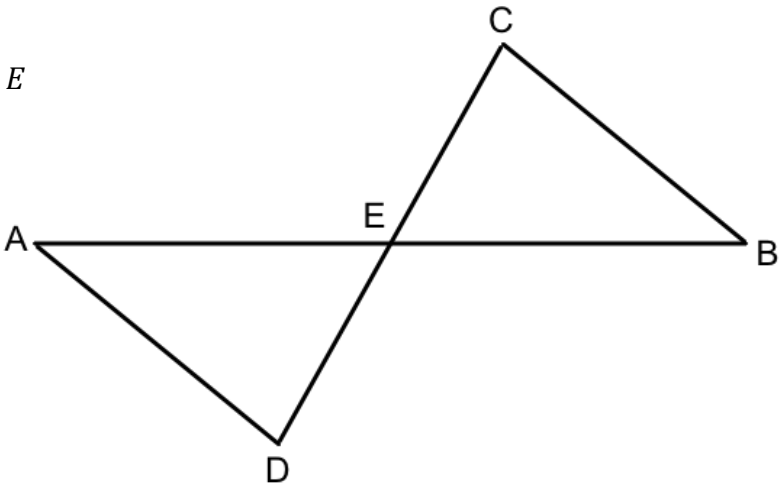
Prove: $\angle BCD \cong \angle ABD$



Statements		Reasons
1) AB ≅ CD	S	**1)** Given
2) AD ≅ BC	S	**2)** Given
3) AC ≅ AC	S	**3)** Reflexive property
4) ΔABC ≅ ΔCDA		**4)** SSS
5) <BCD ≅ <ABD		**5)** CPCTC

9. Given: $\overline{AEB}$ bisects $\overline{DEC}$ at E
$\angle A \cong \angle B$

Prove: $\Delta ADE \cong \Delta BCE$



Statements		Reasons
1) AEB bisects DEC at E		**1)** Given
2) DE ≅ CE	S	**2)** Definition of a bisector
3) <A ≅ <B	A	**3)** Given
4) <AED ≅ <BEC	A	**4)** Vertical angles
5) ΔADE ≅ ΔBCE		**5)** SAA