 Name: _____

5.5D2 ~ Congruent Triangle Proofs

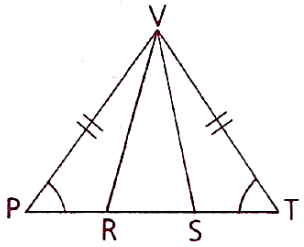
Past due on: _____ Period _____

1. Study the congruent sides and angles shown by the tick marks and arc marks, then identify the additional information needed to support the specified method of proving that the indicated triangles are congruent.

a.

b.

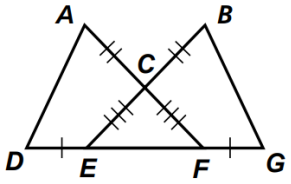
c.



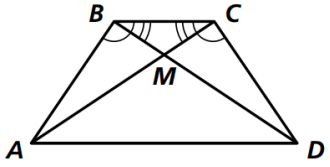
TRIANGLES	METHOD	NEEDED INFORMATION
$\triangle PSV$ & $\triangle TRV$	SAS	
	ASA	
	AAS	

Name a pair of overlapping triangles that can be proven to be congruent. Identify the congruence theorem that would prove it.

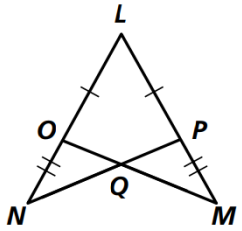
2. Given: $\overline{DE} \cong \overline{FG}, \overline{AC} \cong \overline{CB}, \overline{EC} \cong \overline{FC}, \angle AFD \cong \angle BEG$



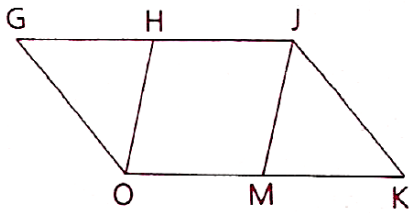
3. Given: $\angle ABC \cong \angle DCB, \angle CBD \cong \angle BCA$



4. Given: $\overline{LP} \cong \overline{LO}, \overline{PM} \cong \overline{ON}$



5. Given: H is the midpoint of $\overline{GJ}$
M is the midpoint of $\overline{OK}$
$\overline{GO} \cong \overline{JK}$
$\overline{GJ} \cong \overline{OK}$
$\angle G \cong \angle K$
OK = 27
$m\angle GOH = x + 24$
$m\angle GHO = 2y - 7$
$m\angle JMK = 3y - 23$
$m\angle MJK = 4x - 105$



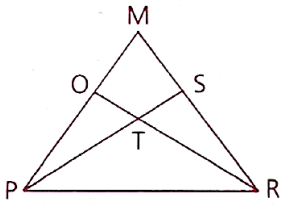
   a. Explain why $\triangle GOH$ and $\triangle KJM$ are congruent.

   b. Set up and solve equations to find the values of x and y.

   c. Find $m\angle GOH$, $m\angle GHO$, and GH.

6. Given: $\overline{MO} \cong \overline{MS}$
$\angle SPM \cong \angle ORM$

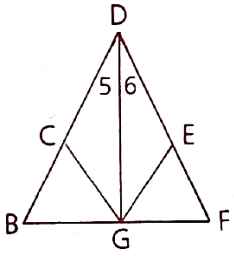
Prove: $\triangle PSM \cong \triangle ROM$



STATEMENTS	REASONS

7. Given: $\overline{BC} \cong \overline{FE}$
$\overline{DC} \cong \overline{DE}$
$\angle 5 \cong \angle 6$

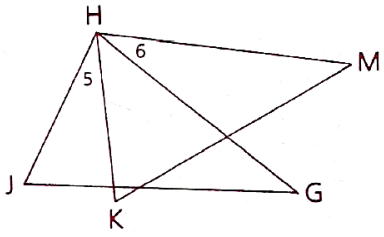
Prove: $\triangle BDG \cong \triangle FDG$



STATEMENTS	REASONS

8. Given: $\overline{JH} \cong \overline{KH}$
$\overline{HG} \cong \overline{HM}$
$\angle 5 \cong \angle 6$

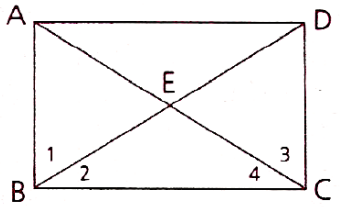
Prove: $\triangle JHG \cong \triangle KHM$



STATEMENTS	REASONS

9. Given: $\angle 1$ is comp. to $\angle 2$
$\angle 3$ is comp. to $\angle 4$
$\angle 1 \cong \angle 3$

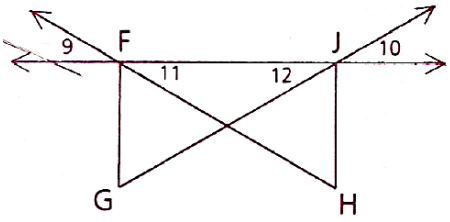
Prove: $\triangle ABC \cong \triangle DCB$



STATEMENTS	REASONS

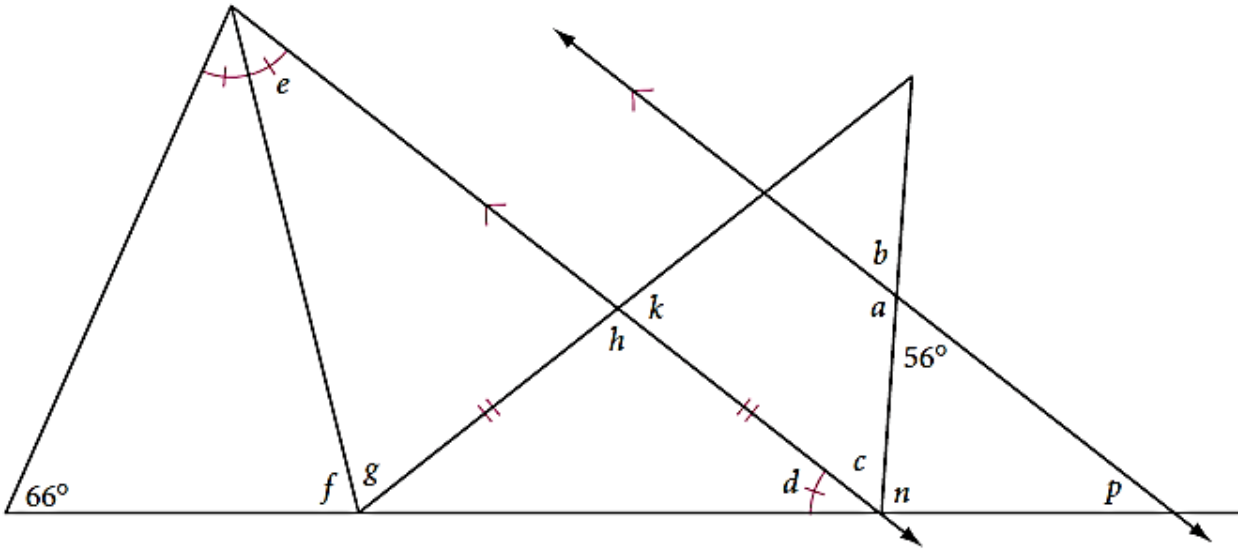
10. Given: $\angle 9 \cong \angle 10$
$\angle GFH \cong \angle HJG$

Prove: $\triangle GFJ \cong \triangle HJF$



STATEMENTS	REASONS

11. Find the indicated angle measures.



12. Find the indicated angle measures.