HW 8-1 Congruent Triangle Problems - Honors

Name: _____

I. $\Delta PQR \cong \Delta ABC$. Find the values of x and y.

1. $m\angle R = 5x + 70, m\angle C = 24x - 25, QR = 4y + 2, BC = x + y$

2. $m\angle R = 90 - y, m\angle C = 13, PR = 3x + y - 1, AC = 32 - x$

3. $PQ = 5x - 31, QR = -3y - 1, BC = x + 1, AB = 9 - y$

4. $m\angle A = 15y - 3, m\angle P = 43 - x, PQ = 11 - x, AB = 3y + 1$

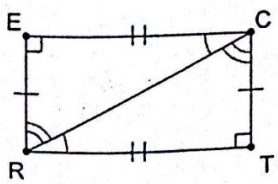
5. $AB = 2x + y, PQ = 7, BC = 11, QR = 4x + y$

6. $\Delta XYZ \cong \Delta MNO, m\angle X = x + 10, m\angle M = y + 20, m\angle Y = 3x$, and $m\angle N = x + 3y$. Find $m\angle X$ and $m\angle Y$.

II. Indicate which triangles are congruent. Be sure to have the correspondence of the letters correct.

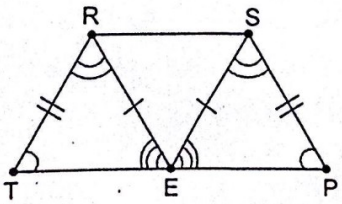
a. $\Delta ERC \cong$ _____

Why is $\overline{RC} \cong \overline{RC}$?



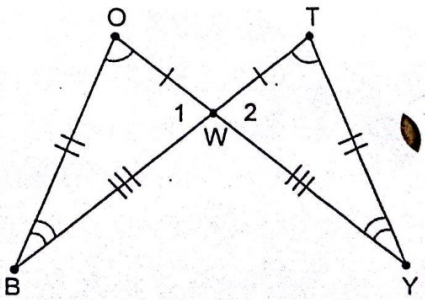
b. E is the midpoint of $\overline{TP}$

$\Delta SPE \cong$ _____



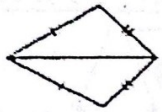
c. $\Delta BOW \cong$ _____

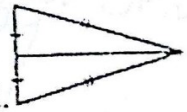
Why is $\angle 1 \cong \angle 2$?

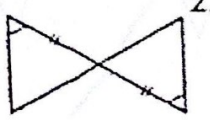


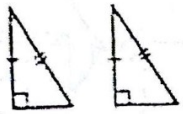
HW 8-2 – Congruent Triangles OMIT # 11 and 12

State how △s could be proven ≅. If not ≅, state NONE.

1. 

2. 

3. 

4. 

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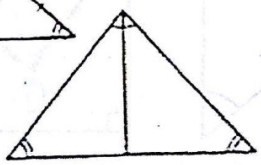
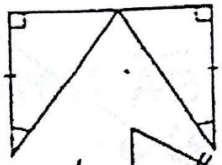
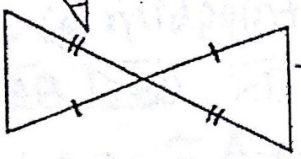
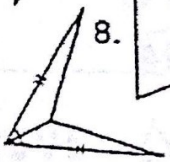
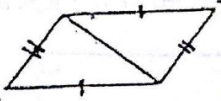
6. 

7. 

8. 

9. 

10. 

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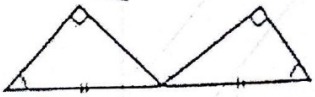
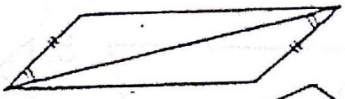
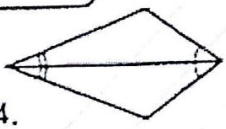
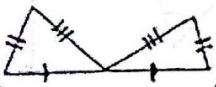
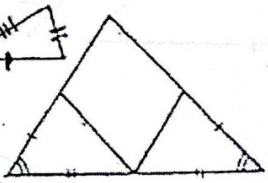
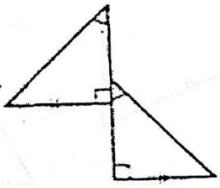
12. 

13. 

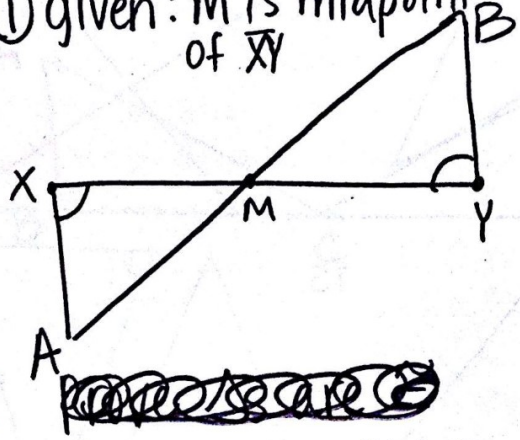
14. 

15. 

16. 

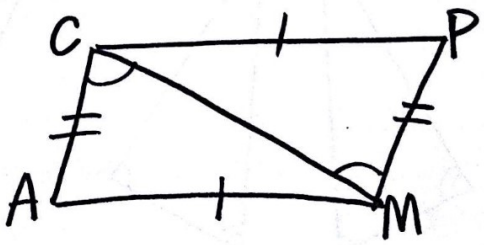
17. 

① given: M is midpoint of $\overline{XY}$



Prove ∠A ≅ ∠B

②

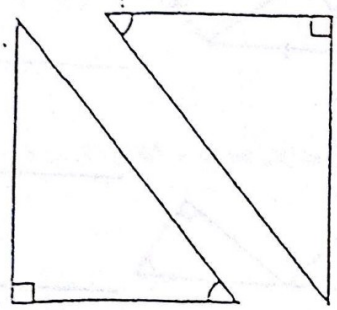


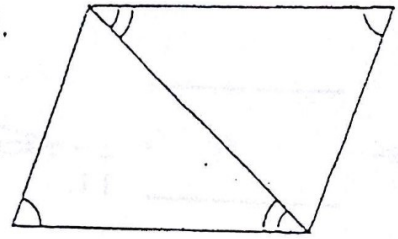
Prove △s are ≅.

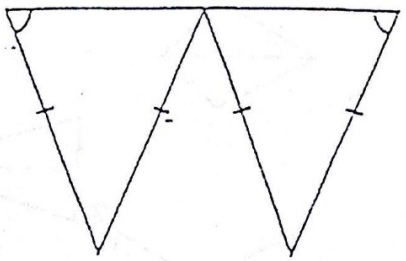
HW 8-3

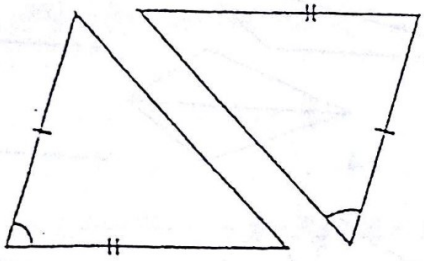
More Congruent Triangles

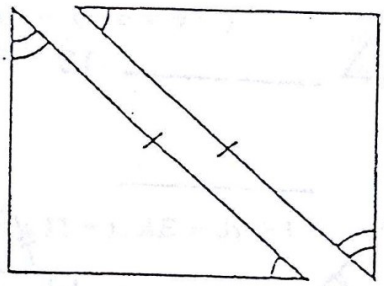
Identify which property will prove these triangles congruent. (SSS, SAS, ASA, AAS, HL or none)

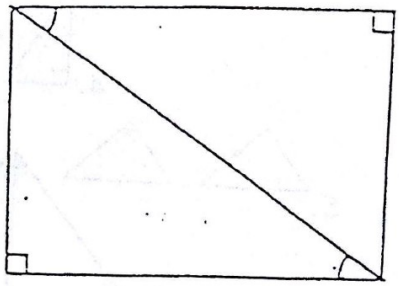
1. 

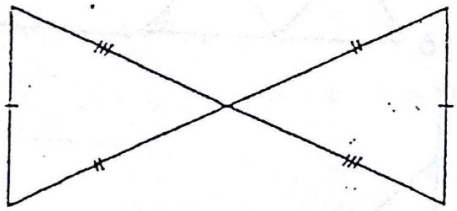
2. 

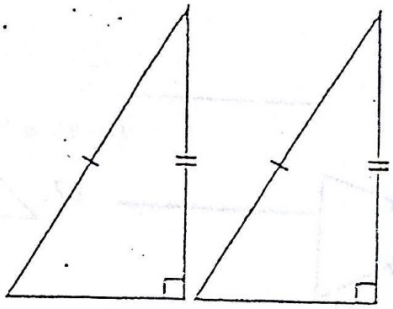
3. 

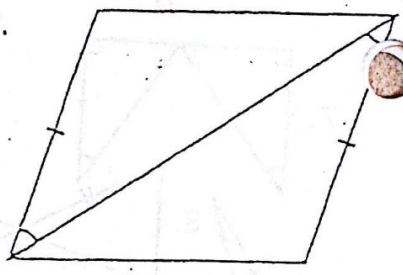
4. 

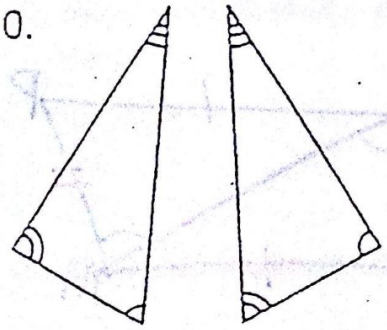
5. 

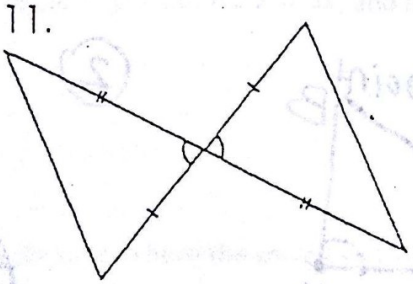
6. 

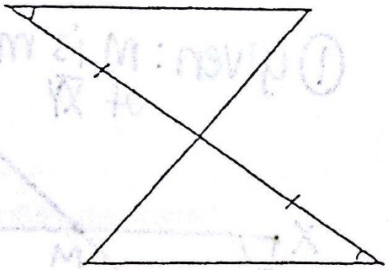
7. 

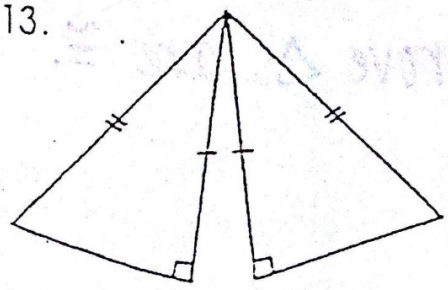
8. 

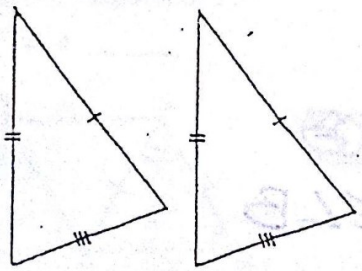
9. 

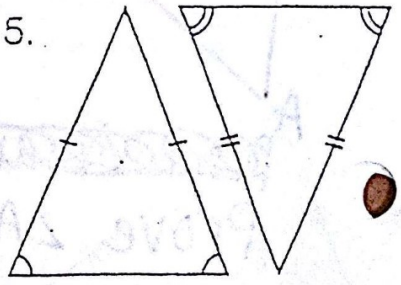
10. 

11. 

12. 

13. 

14. 

15. 

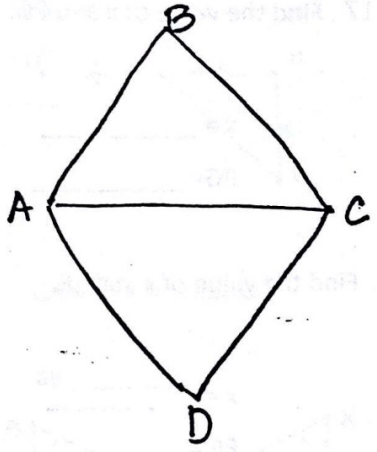
HW 8-4

~~Practice Proofs~~ – For each of the following create a two-column proof. Be sure to use correct notation and only use postulates/theorems after you have all the necessary components needed to validate that statement.

(1) Given: $\overline{BC} \cong \overline{CD}$

$\overline{AC}$ bisects $\angle BCD$

Prove: $\triangle ABC \cong \triangle ADC$



(2) Given: $\overline{AB} \cong \overline{ED}$

C is midpoint of $\overline{BD}$

$\overline{AB} \perp \overline{BD}$, $\overline{ED} \perp \overline{BD}$

Prove: $\triangle ABC \cong \triangle EDC$