Name _____ Period ____ GP

UNIT #7: TRIANGLE CONGRUENCE

Congruent Polygons	AAS	Congruence	Corresponding Parts
SSS	HL	Statement	CPCTC
SAS	ASA		

Dates, assignments, and quizzes subject to change without advance notice

Monday	Tuesday	Block Day	Friday
		7/8 CONGRUENT POLYGONS SSS AND SAS	**9** ASA, AAS, and HL
12 Proofs	**13** **QUIZ** CPCTC	**14/15** **REVIEW** **TEST – (PROOFS)**	**16** **TEST**

Wednesday, 11/7/12 or Thursday, 11/8/12

4-3 and 4-4: Congruent Triangles, SSS and SAS

- I can use the properties of equilateral triangles to find missing side lengths and angles.
- I can write a congruency statement representing two congruent polygons.
- I can identify congruent parts of a polygon, given a congruency statement.
- I can prove triangles are congruent using SSS, ASA.

PRACTICE: pg. 234 #3-11, 19, 22-25, 31 (15 problems) Triangle Congruence Worksheet #1

Friday, 11/9/12

4-5: ASA, AAS, and HL

- I can prove triangles are congruent using ASA, AAS, and HL
- I can mark pieces of a triangle congruent given how they are to be proved congruent.

PRACTICE: Triangle Congruence Worksheet #2

Monday, 11/12/12

Triangle Congruence Proofs

- I can write a two-column proof to show that two triangles are congruent.

PRACTICE: Triangle Proofs Worksheet Part 1

Tuesday, 11/13/12

4-6: Triangle Proofs with CPCTC ➔ **QUIZ**

- I can write a two-column proof to show that two triangles are congruent.

PRACTICE: Triangle Proofs Worksheet Part 2

Wednesday, 11/14/12 or Thursday, 11/15/12

Review ➔ **Test: Triangle Properties (Proofs)**

- I can assess my knowledge and prepare for the test.

PRACTICE: Review Worksheet

Friday, 11/16/12

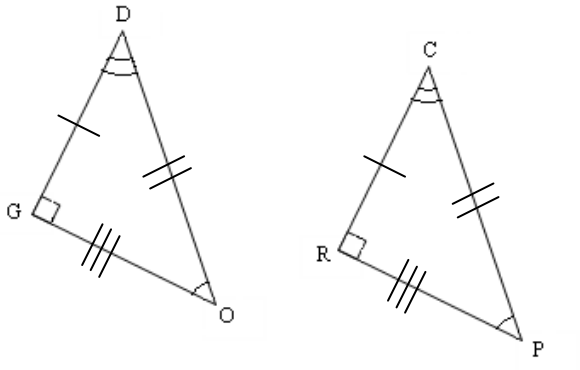
➔ **Test: Triangle Properties**

Name _____ Period _____ GH

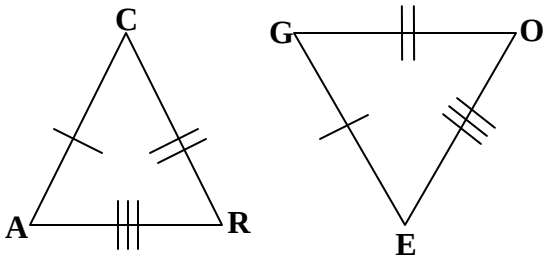
Triangle Congruence

I. Name the congruent triangles.

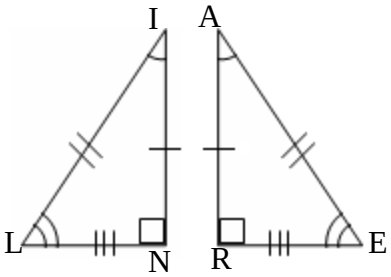
1. $\triangle OGD \cong \triangle$_____



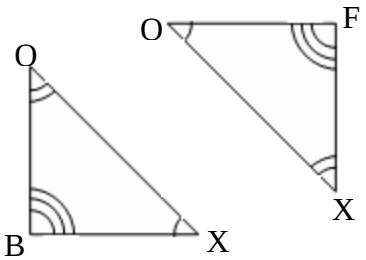
2. $\triangle RAC \cong \triangle$_____



3. $\triangle LIN \cong \triangle$_____

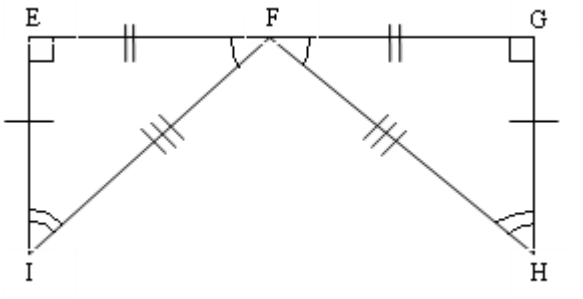


4. $\triangle FOX \cong \triangle$_____



II. Name the congruent triangle and the congruent parts..

7.



$\triangle FGH \cong \triangle$_____

$\measuredangle EFI \cong \measuredangle$ _____ $\overline{FG} \cong$ _____

$\measuredangle G \cong \measuredangle$ _____ $\overline{GH} \cong$ _____

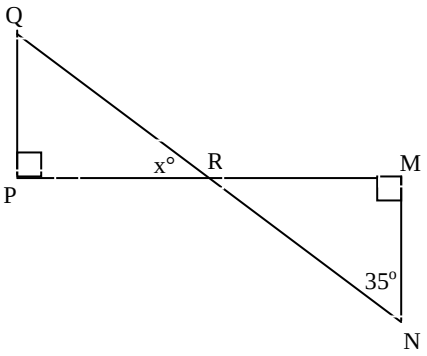
$\measuredangle H \cong \measuredangle$ _____ $\overline{FH} \cong$ _____

Use the congruency statement to fill in the corresponding congruent parts.

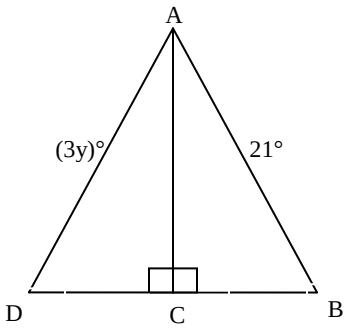
8. $\triangle EFI \cong \triangle HGI$ $\measuredangle E \cong \measuredangle$ _____ $\overline{FE} \cong$ _____ $\measuredangle EFI \cong \measuredangle$ _____

$\overline{FI} \cong$ _____ $\measuredangle FIE \cong \measuredangle$ _____ $\overline{IE} \cong$ _____

9. $\triangle PQR \cong \triangle MNR$. Find x.



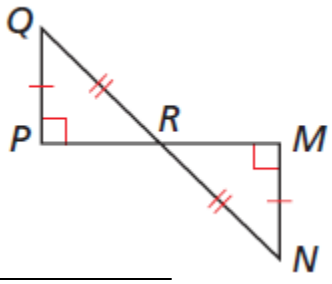
10. $\triangle ABC \cong \triangle ADC$. Find y.



Third Angles Theorem (add to Theorems, Postulates and Definitions Card) –

Proving Triangles Congruent

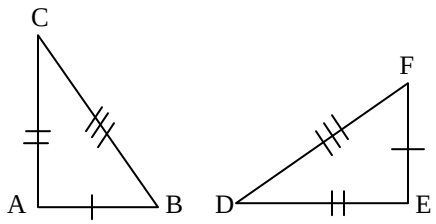
Given: $\angle P$ and $\angle M$ are right angles.
R is the midpoint of $\overline{PM}$.
$\overline{PQ} \cong \overline{MN}, \overline{QR} \cong \overline{NR}$
Prove: $\triangle PQR \cong \triangle MNR$



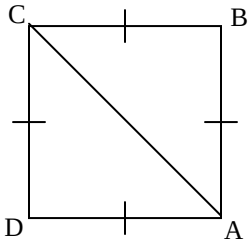
Triangle Congruence Worksheet #1

For each pair of triangles, tell which postulates, **if any**, make the triangles congruent.

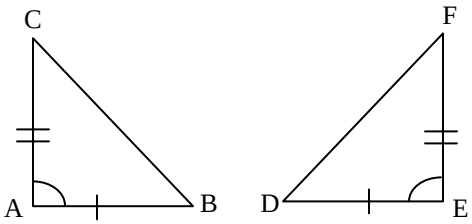
12. ΔABC ≅ ΔEFD _____



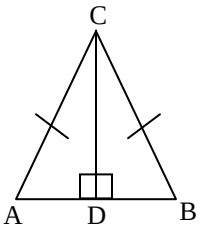
13. ΔABC ≅ ΔCDA _____



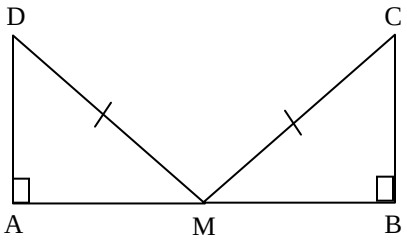
14. ΔABC ≅ ΔEFD _____



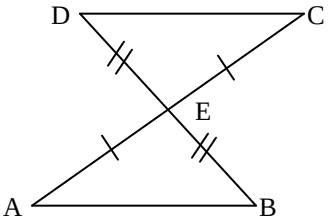
15. ΔADC ≅ ΔBDC _____



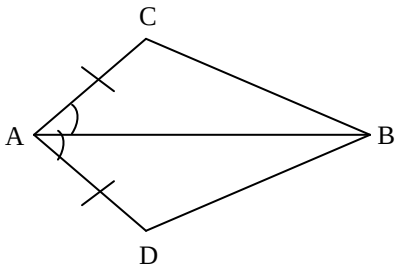
21. ΔMAD ≅ ΔMBC _____



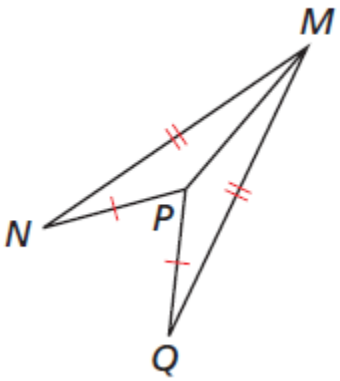
ΔABE ≅ ΔCDE _____



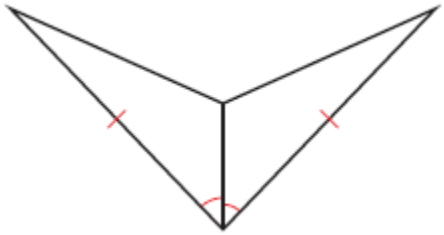
23. ΔACB ≅ ΔADB _____



23. $\triangle MNP \cong \triangle MQP$ _____



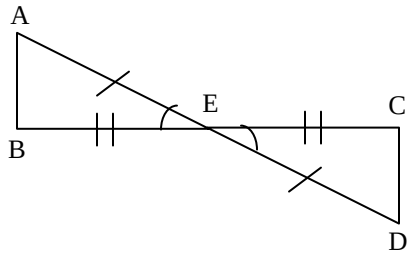
23. _____



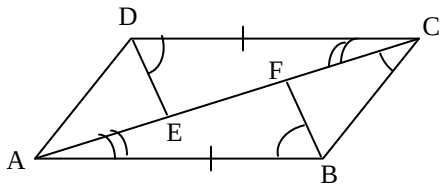
Triangle Congruence Worksheet #2

I. For each pair of triangles, tell which postulate, if any, can be used to prove the triangles congruent.

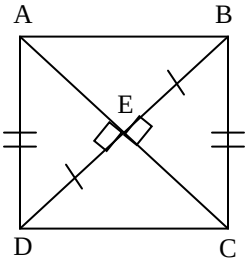
1. $\triangle AEB \cong \triangle DEC$ _____



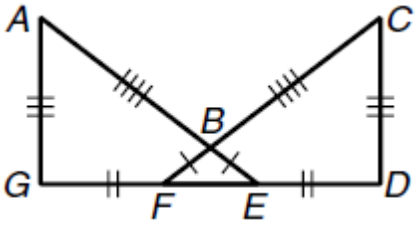
2. $\triangle CDE \cong \triangle ABF$ _____



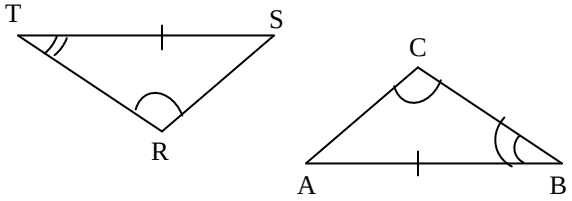
3. $\triangle DEA \cong \triangle BEC$ _____



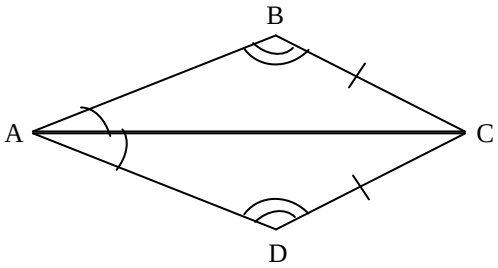
4. $\triangle AGE \cong \triangle CDF$ _____



5. $\triangle RTS \cong \triangle CBA$ _____

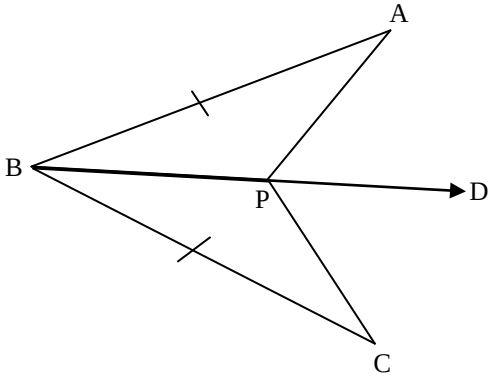


6. $\triangle ABC \cong \triangle ADC$ _____

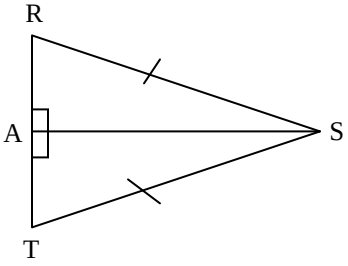


7. $\triangle BAP \cong \triangle BCP$ _____

Given: $\overrightarrow{BD}$ bisects $\angle ABC$

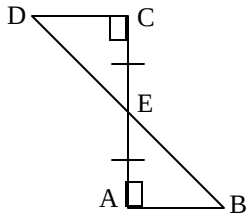


8. $\triangle SAT \cong \triangle SAR$ _____



II. For each pair of triangles, tell: (a) Are they congruent (b) Write the triangle congruency statement. (c) Give the postulate that makes them congruent.

1.

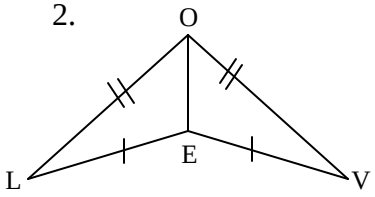


a. _____

b. Δ_____ ≅ Δ _____

c. _____

2.

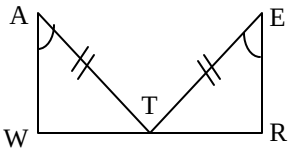


a. _____

b. Δ_____ ≅ Δ _____

c. _____

3. Given: T is the midpoint of $\overline{WR}$

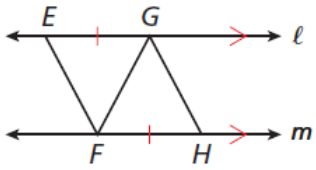


a. _____

b. Δ_____ ≅ Δ _____

c. _____

4.

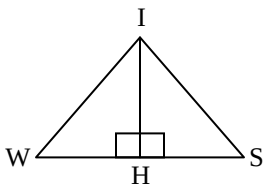


a. _____

b. Δ_____ ≅ Δ _____

c. _____

5. Given: $\overrightarrow{IH}$ Bisects ∠WIS

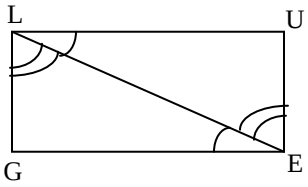


a. _____

b. Δ_____ ≅ Δ _____

c. _____

6.

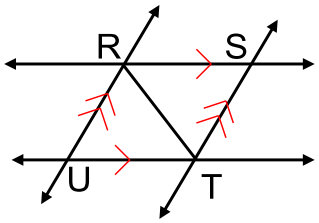


a. _____

b. Δ_____ ≅ Δ _____

c. _____

7.

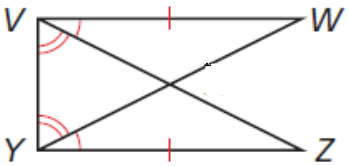


a. _____

b. Δ_____ ≅ Δ _____

c. _____

8.

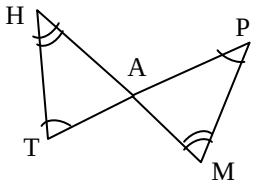


a. _____

b. Δ_____ ≅ Δ _____

c. _____

9.

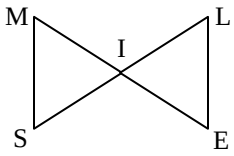


a. _____

b. Δ_____ ≅ Δ _____

c. _____

10. Given: I is the midpoint of $\overline{ME}$ and $\overline{SL}$

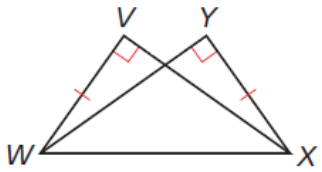


a. _____

b. Δ_____ ≅ Δ _____

c. _____

11.

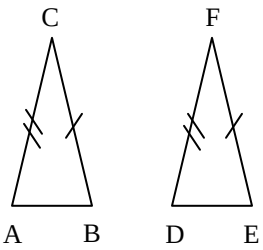


a. _____

b. Δ_____ ≅ Δ _____

c. _____

12.



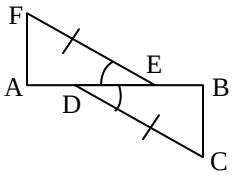
a. _____

b. Δ_____ ≅ Δ _____

c. _____

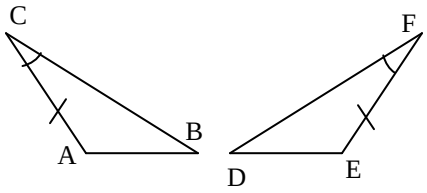
III. Using the given postulate, tell which parts of the pair of triangles should be shown congruent.

1. SAS



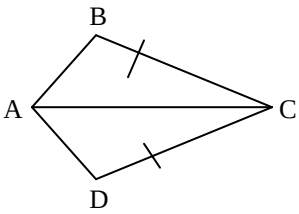
_____ ≅ _____

2. ASA



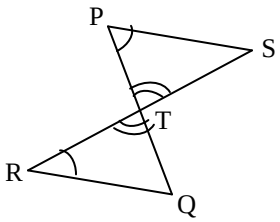
_____ ≅ _____

3. SSS



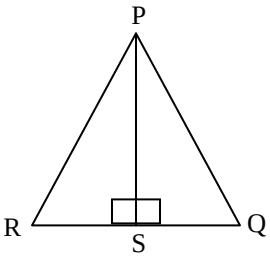
_____ ≅ _____

4. AAS



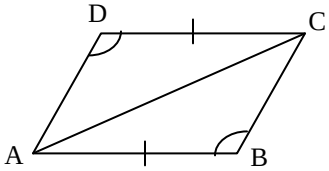
_____ ≅ _____

5. HL



_____ ≅ _____

6. ASA



_____ ≅ _____

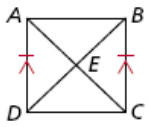
Name:_____Period:_____ GH

Triangle Proofs Worksheet

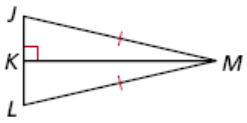
For each problem below, write a two-column proof on a separate piece of paper.

I. Proving Triangles Congruent:

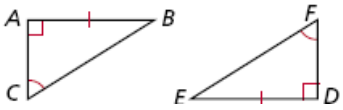
1. Use AAS to prove the triangles congruent.
Given: $\overline{AD} \parallel \overline{BC}$, $\overline{AD} \cong \overline{CB}$
Prove: $\triangle AED \cong \triangle CEB$



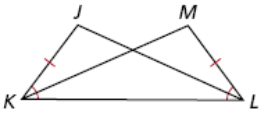
2. **Given:** $\overline{KM} \perp \overline{JL}$, $\overline{JM} \cong \overline{LM}$, $\angle JMK \cong \angle LMK$
Prove: $\triangle JKM \cong \triangle LKM$



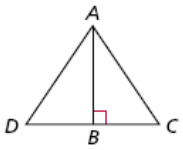
3. **Given:** $\overline{AB} \cong \overline{DE}$, $\angle C \cong \angle F$
Prove: $\triangle ABC \cong \triangle DEF$



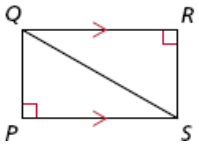
4. **Given:** $\overline{JK} \cong \overline{ML}$, $\angle JKL \cong \angle MLK$
Prove: $\triangle JKL \cong \triangle MLK$



5. **Given:** B is the midpoint of $\overline{DC}$. $\overline{AB} \perp \overline{DC}$
Prove: $\triangle ABD \cong \triangle ABC$

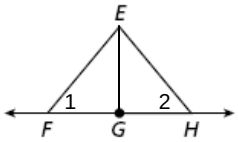


6. Use AAS to prove the triangles congruent.
Given: $\angle R$ and $\angle P$ are right angles.
$\overline{QR} \parallel \overline{SP}$
Prove: $\triangle QPS \cong \triangle SRQ$

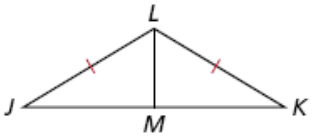


II. Using CPCTC

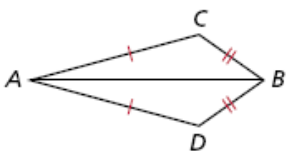
7. **Given:** G is the midpoint of $\overline{FH}$.
$\overline{EF} \cong \overline{EH}$
Prove: $\angle 1 \cong \angle 2$



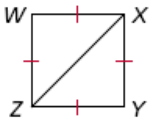
8. **Given:** $\overline{LM}$ bisects $\angle JLK$. $\overline{JL} \cong \overline{KL}$
Prove: M is the midpoint of $\overline{JK}$.



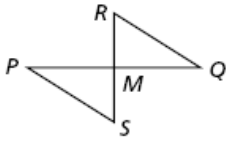
9. **Given:** $\overline{AC} \cong \overline{AD}$, $\overline{CB} \cong \overline{DB}$
Prove: $\overline{AB}$ bisects $\angle CAD$.



10. **Given:** $\overline{WX} \cong \overline{XY} \cong \overline{YZ} \cong \overline{ZW}$
Prove: $\angle W \cong \angle Y$



11. **Given:** M is the midpoint of $\overline{PQ}$ and $\overline{RS}$.
Prove: $\overline{QR} \cong \overline{PS}$

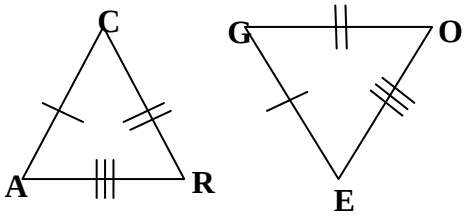


Review: Triangles and Triangle Congruence

You will need a separate piece of paper to show all your work. This review is ***not*** comprehensive; always be sure to go back through your old homework and quizzes.

◎ *I can write a congruency statement representing two congruent polygons*

1. Write a congruency statement for the two triangles at right.

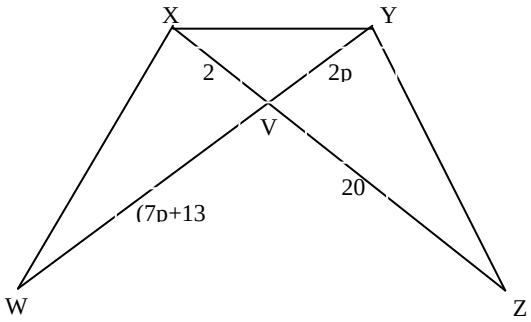


◎ *I can identify congruent parts of a polygon, given a congruency statement*

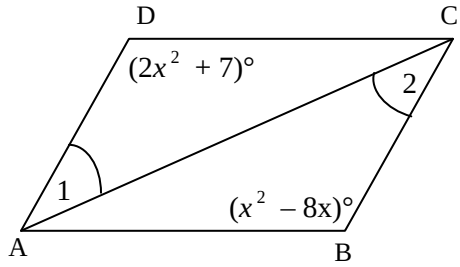
2. List ALL of the congruent parts if $\triangle EFG \cong \triangle HGF$

◎ *I can use algebra to find the side lengths and angle measures of congruent polygons*

3. $\triangle WXY \cong \triangle ZYX$. Find p.



4. $\triangle ADC \cong \triangle CBA$. Find x.



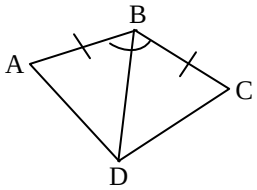
◎ *I can name the five ways to prove triangles are congruent*

5. Name the 5 ways to prove triangles congruent.

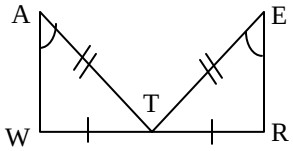
◎ *I can prove triangles are congruent*

For each pair of triangles, tell: (a) Are they congruent (b) Write the triangle congruency statement. (c) Give the postulate that makes them congruent.

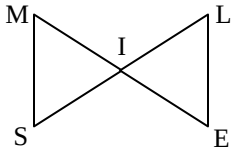
6.



7.

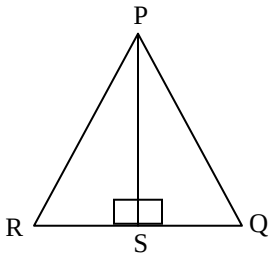


8. Given: I is the midpoint of $\overline{ME}$ and $\overline{SL}$

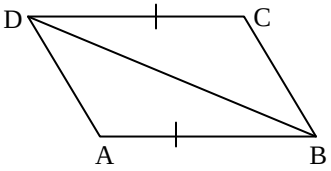


◎ *I can mark pieces of a triangle congruent given how they are to be proved congruent*

9. What information is missing to use HL?

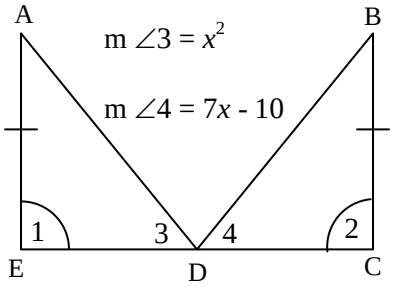


10. What information is missing to use SAS?

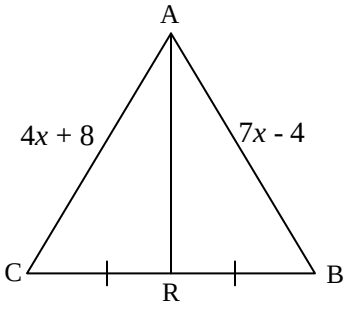


IV. For which value(s) of x are the triangles congruent?

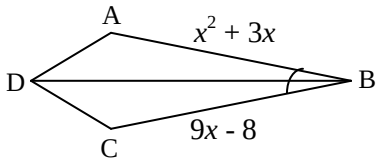
3. x = _____

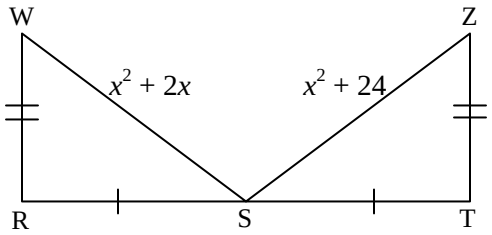


4. x = _____



5. x = _____

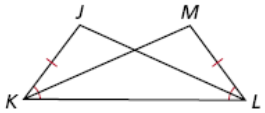




◎ *I can write a two-column proof over congruent triangles*

11.

Given: $\overline{JK} \cong \overline{ML}$, $\angle JKL \cong \angle MLK$
Prove: $\triangle JKL \cong \triangle MLK$



12. Complete and review ALL proofs on the proofs worksheet.