Geometry

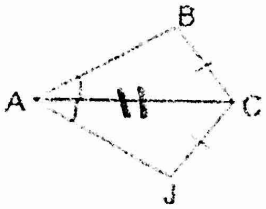
Self- Quiz_Triangle Congruence and Proof

Student Name: Answer Key

Date: _____ Block: _____

1. Mark **EVERYTHING** you know is congruent in the two triangles. Are the two triangles congruent? If so, state the reason why. (SSS, SAS, ASA, AAS, HL)

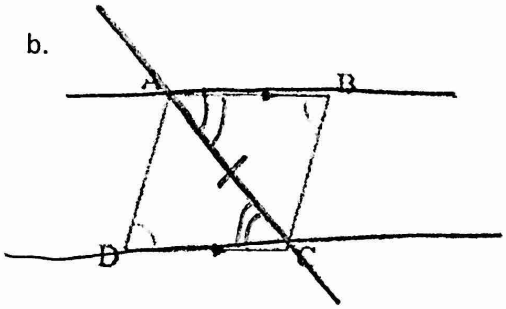
a.



Congruent? YES or NO (circle one) ASS

If yes, $\Delta ABC \cong \Delta$_____ by _____

b.



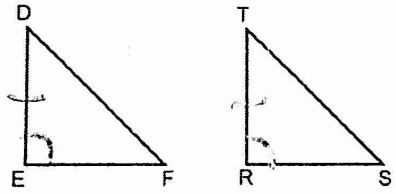
Congruent? YES or NO (circle one)

If yes, $\Delta ADC \cong \Delta$ CBA by AAS

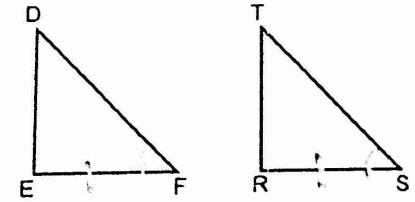
"find the missing piece"

e the diagrams below for numbers 2-5 and fill in the blank with the needed piece of information.

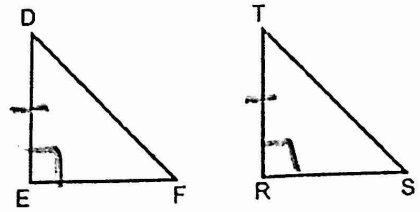
2. If $\overline{DE} \cong \overline{TR}, \angle E \cong \angle R, and$ $\angle D$ $\cong$ $\angle T$, then $\Delta DEF \cong \Delta TRS$ by ASA.



3. If $\overline{EF} \cong \overline{RS}, \angle F \cong \angle S, and$ $\overline{DF}$ $\cong$ $\overline{TS}$, then $\Delta DEF \cong \Delta TRS$ by SAS.

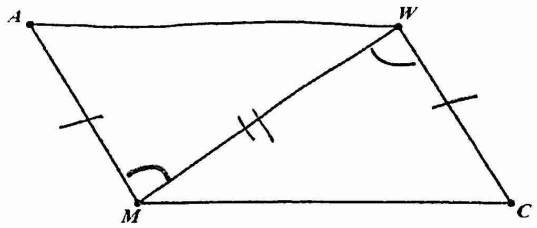


4. If $\angle E$ *and* $\angle R$ are right angles, $\overline{DE} \cong \overline{TR}, and$ $\overline{DF}$ $\cong$ $\overline{TS}$, then $\Delta DEF \cong \Delta TRS$ by HL.



means hypotenuse needs to be $\cong$

5. Complete the proof.



Given: $\overline{AM} \cong \overline{CW}$; $\angle AMW \cong \angle CWM$

Prove: $\Delta AMW \cong \Delta CWM$

Statement	Reason
(1) AM ≅ CW	(1) given
(2) ∠AMW ≅ ∠CWM	(2) given
(3) MW ≅ WM	(3) reflexive
(4) △AMW ≅ △CWM	(4) SAS

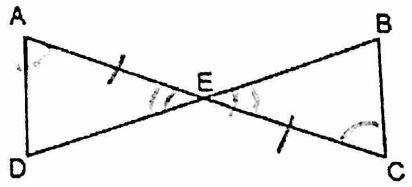
6. **Use the Proof from #5.** Because $\Delta AMW \cong \Delta CWM$, name one other set of corresponding parts not listed in the proof above that are congruent and give the reason why?

CPCTC

∠A ≅ ∠C or ∠AWM ≅ ∠CMW or AW ≅ MC

7. Complete the proof. **Given: ∠A ≅ ∠C**
E is the midpoint of $\overline{AC}$

Prove: △AED ≅ △CEB



Statement	Reason
(1) ∠A ≅ ∠C	(1) given
(2) E is the midpt of AC	(2) given
(3) AE ≅ CE	(3) definition of midpoint
(4) ∠AED ≅ ∠CEB	(4) vertical angles
(5) △AED ≅ △CEB	(5) ASA