

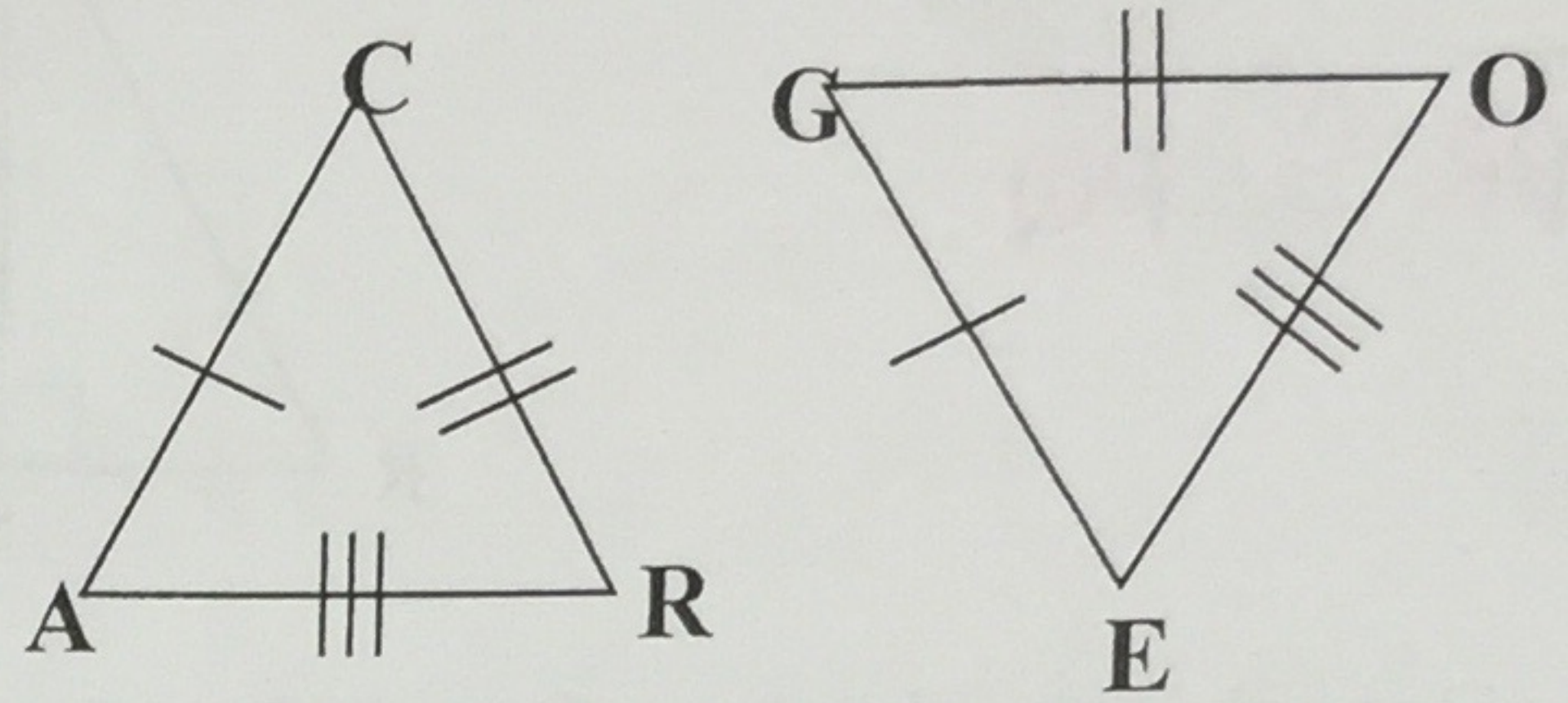
## Review: Triangles and Triangle Congruence

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.

**[SSS]  $\triangle ACR \cong \triangle EGO$**



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

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

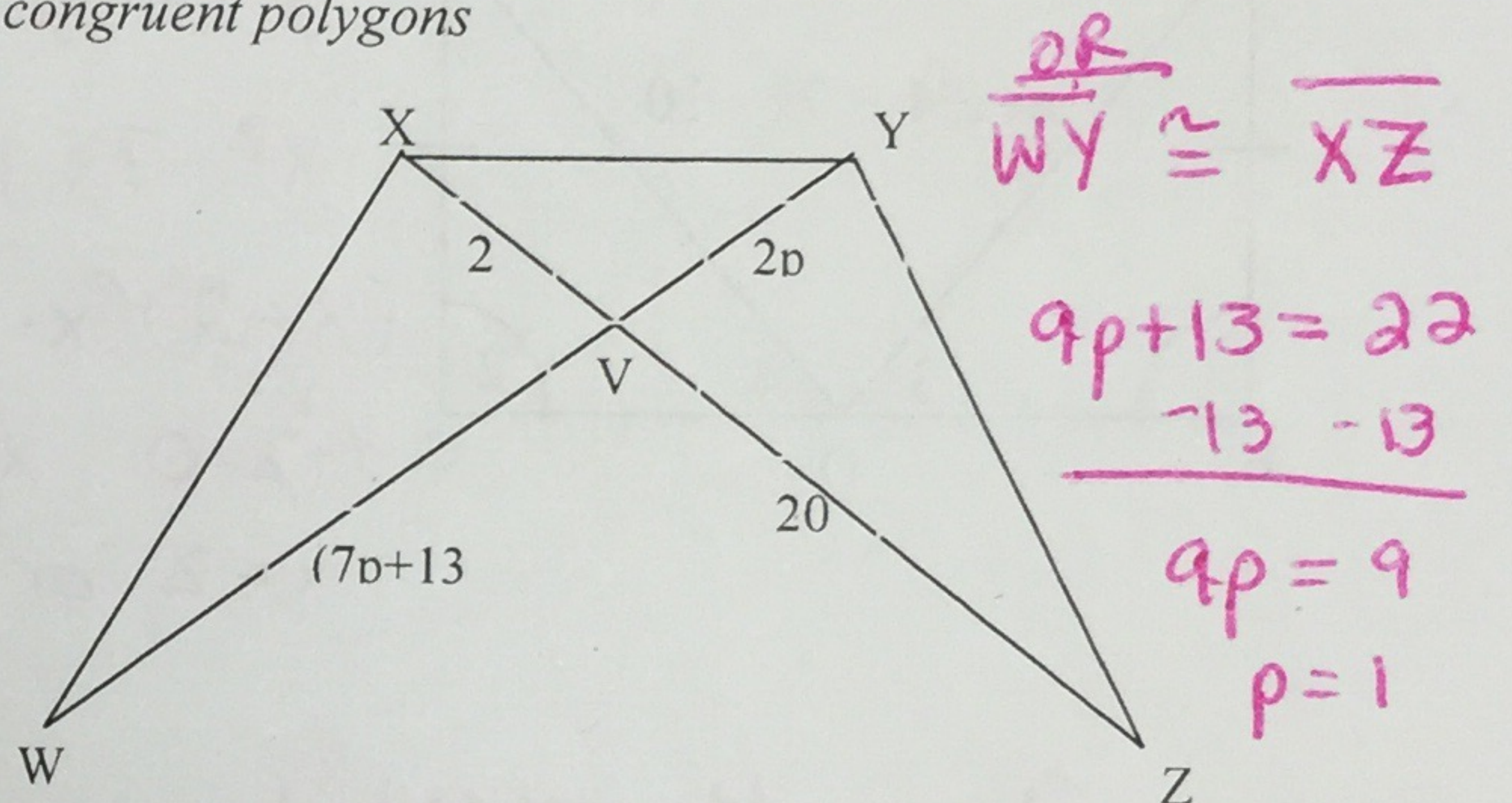
**$\angle E \cong \angle H$     $\angle G \cong \angle F$     $\overline{EF} \cong \overline{HG}$     $\overline{EG} \cong \overline{HF}$   
 $\angle F \cong \angle G$     $\overline{FG} \cong \overline{GF}$**

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

3.  $\square WXY \cong \square ZYX$ . Find p. **area = area**

**$\frac{1}{2} (9p+13)(2) = \frac{1}{2} (22)(2p)$**

**$9p+13 = 22p$   
 $-9p \quad -9p$   
 $\hline 13 = 13p$     **$1 = p$****



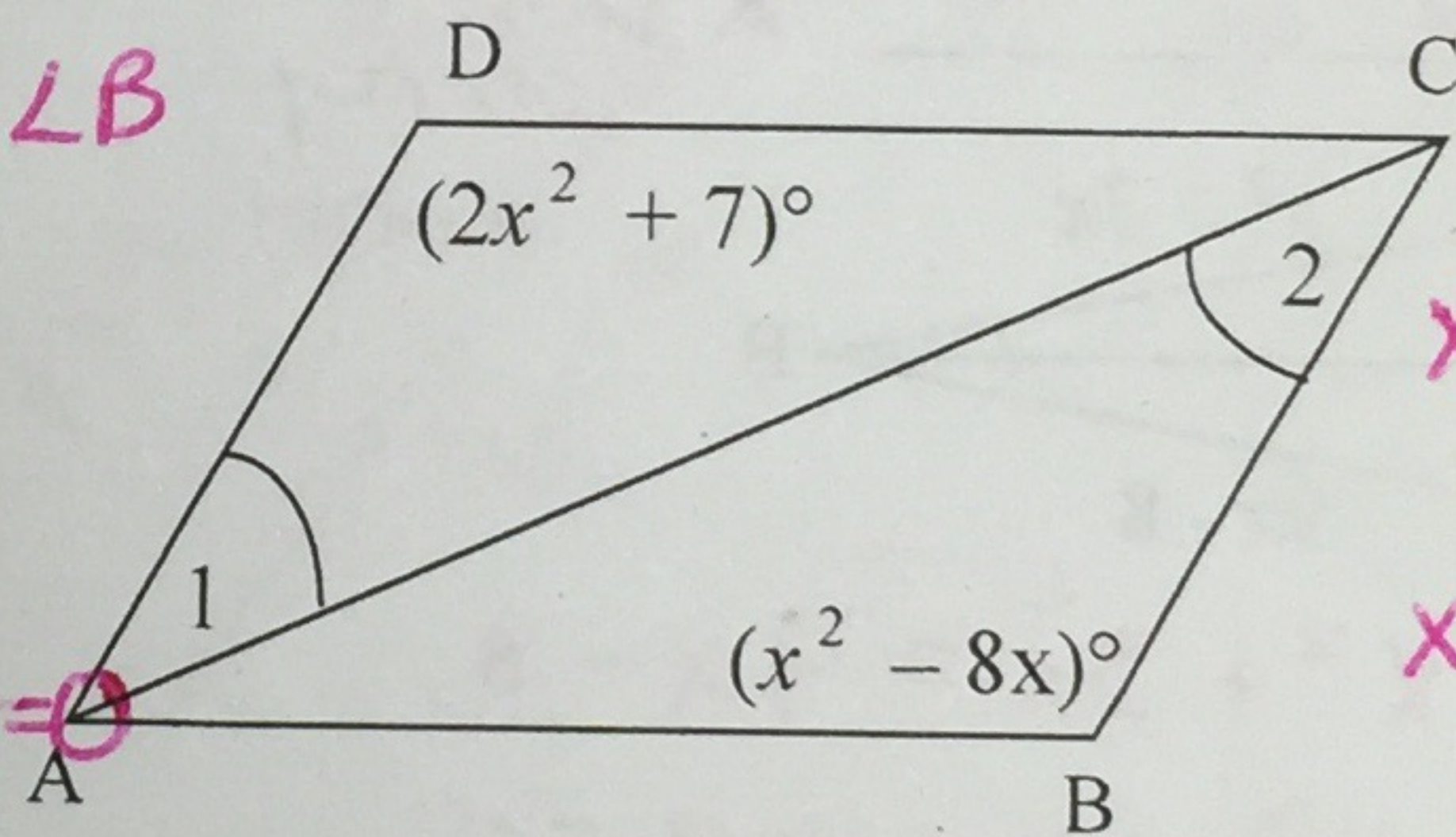
**$\overline{WY} \cong \overline{XZ}$   
 $9p+13 = 22$   
 $-13 \quad -13$   
 $\hline 9p = 9$   
 $p = 1$**

★ 4.  $\square ADC \cong \square CBA$ . Find x.

Don't worry about this one

**$2x^2 + 7 = x^2 - 8x$   
 $-x^2 \quad -x^2$   
 $\hline x^2 + 7 = -8x$   
 $+8x \quad +8x$   
 $\hline x^2 + 8x + 7 = 0 \Rightarrow (x+7)(x+1) = 0$**

**$\angle D \cong \angle B$**



**$x+7=0$   
 $x=-7$   
 $x+1=0$   
 $x=-1$**

⊙ I can name the five ways to prove triangles are congruent

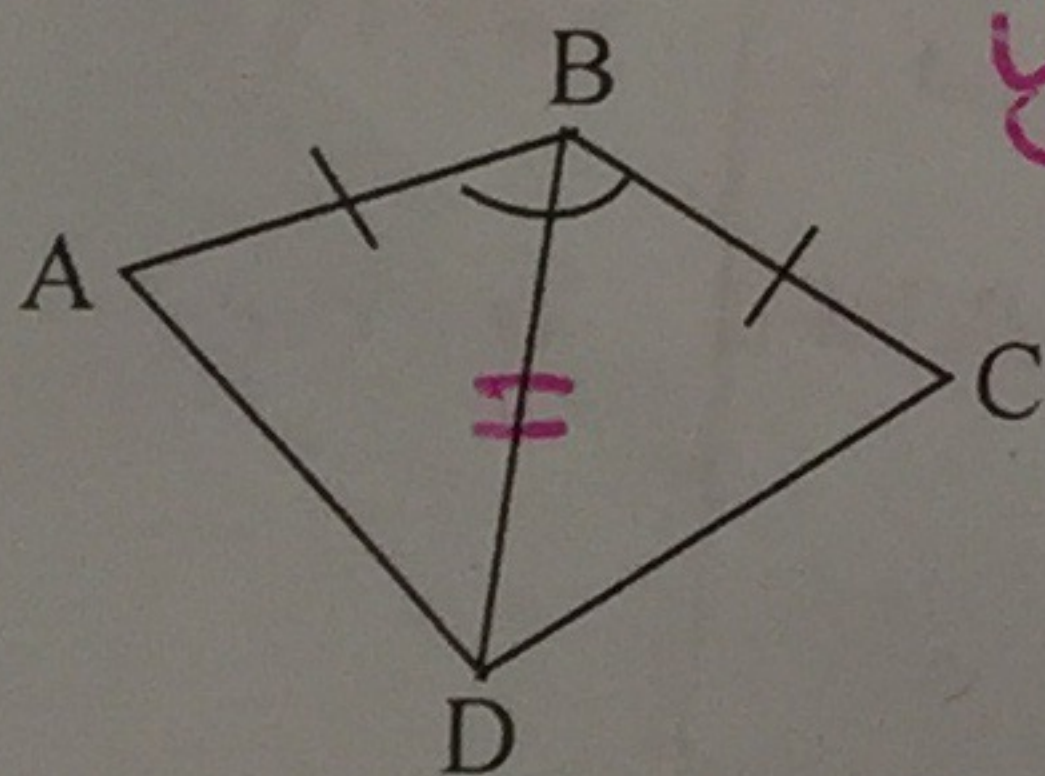
5. Name the 5 ways to prove triangles congruent.

**SSS, AAS, HL, ASA, SAS**

⊙ I can prove triangles are congruent

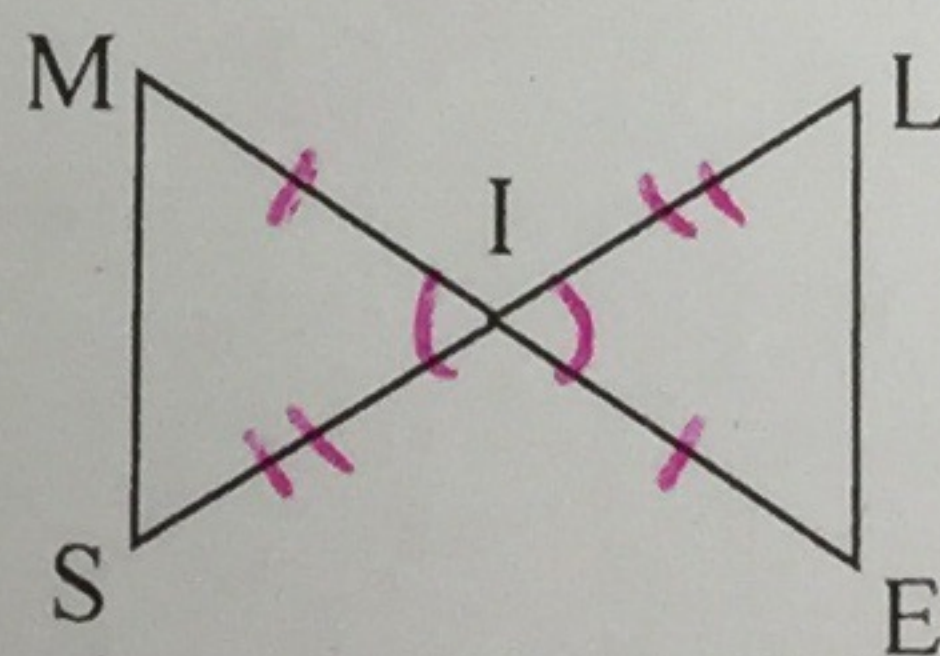
For each pair of triangles, tell: (a) Are they congruent (b) Write the triangle congruency statement. (c) Give the postulate that makes them congruent.

6.



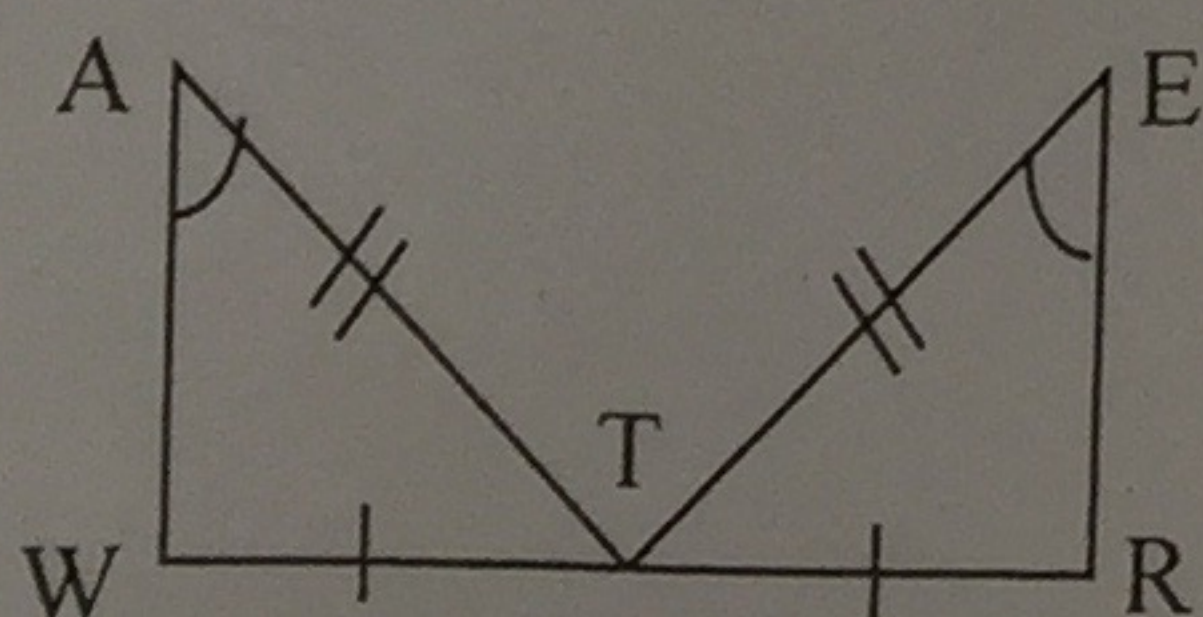
**Yes, SAS  
 $\triangle ABD \cong \triangle CBD$**

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



**Yes, SAS  
 $\triangle MIS \cong \triangle EIL$**

7.



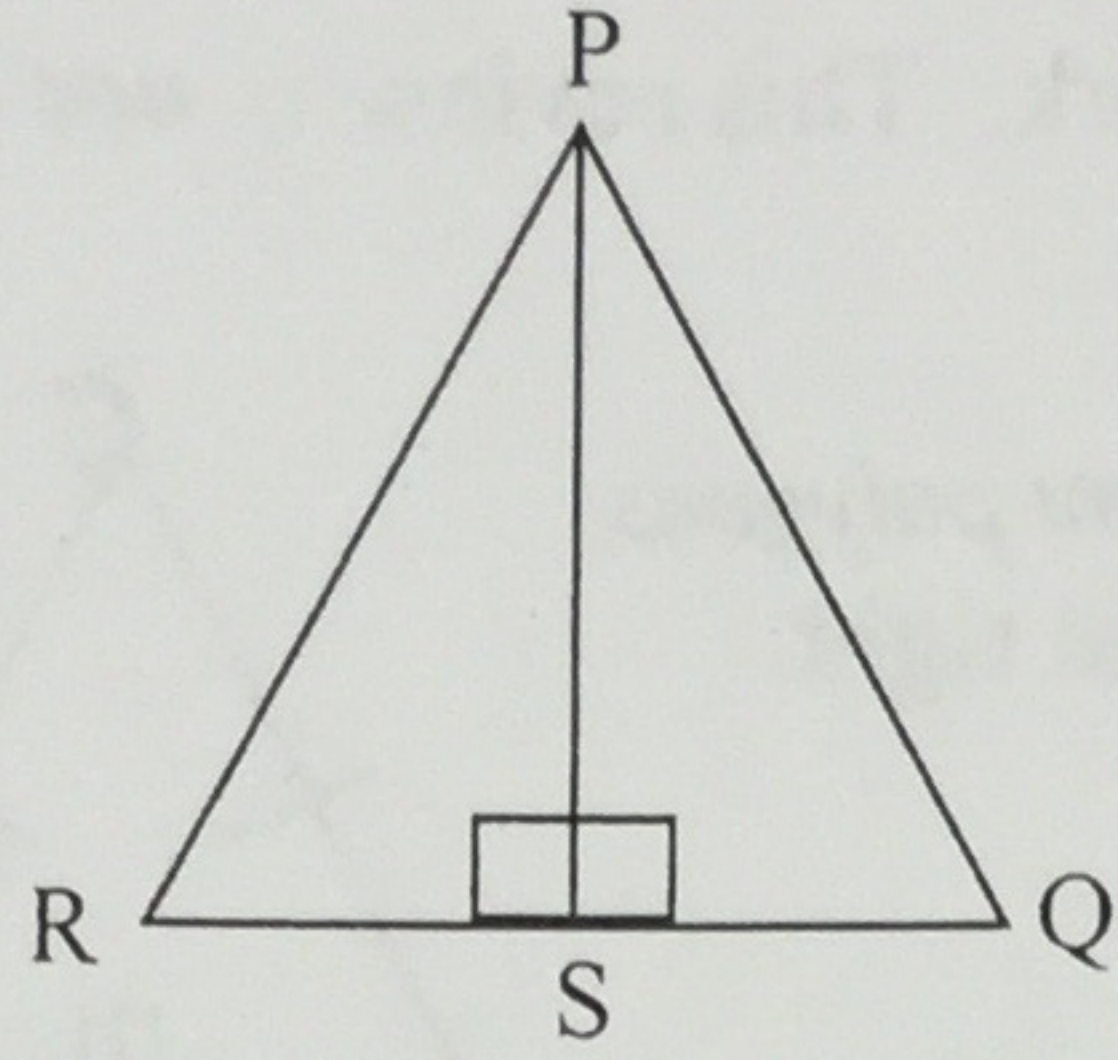
**No - can't prove HL & No SSA**



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

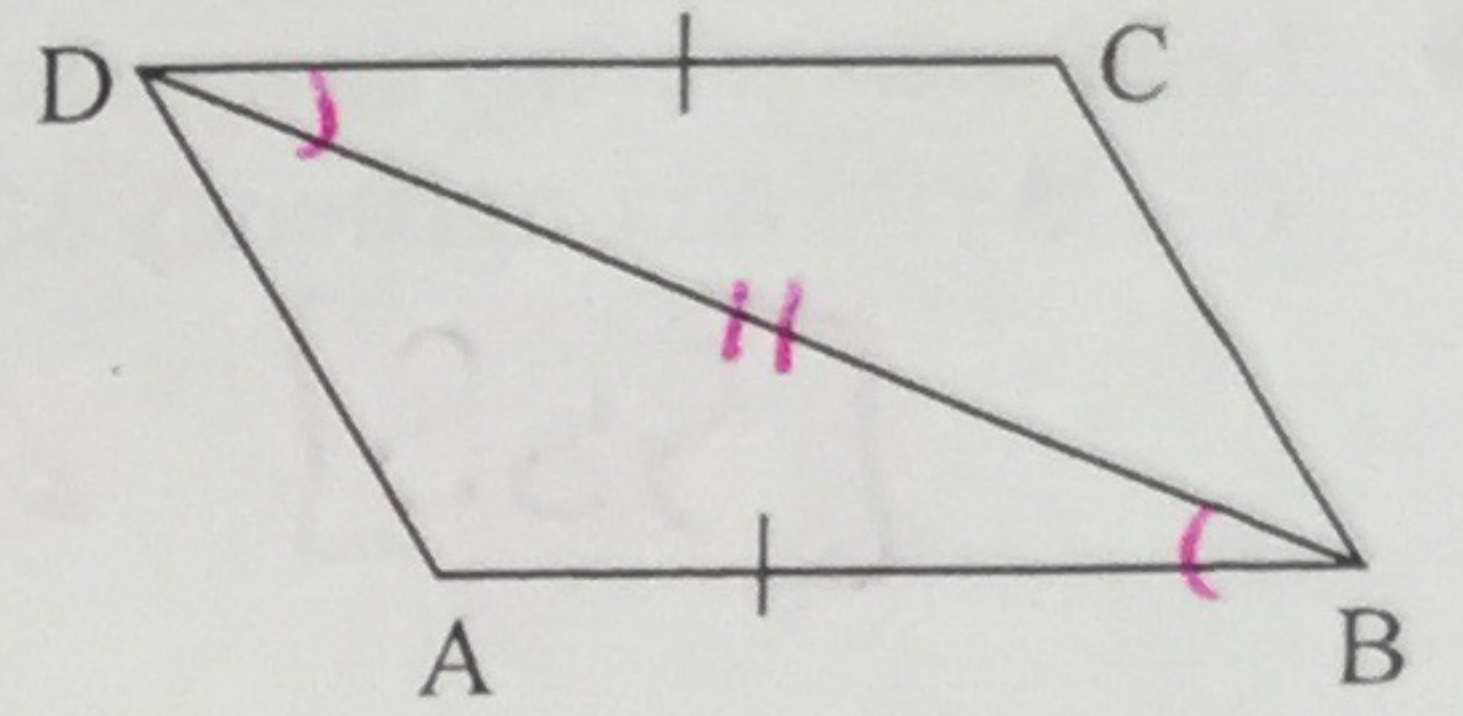
9. What information is missing to use HL?

$\overline{PR} \cong \overline{PQ}$



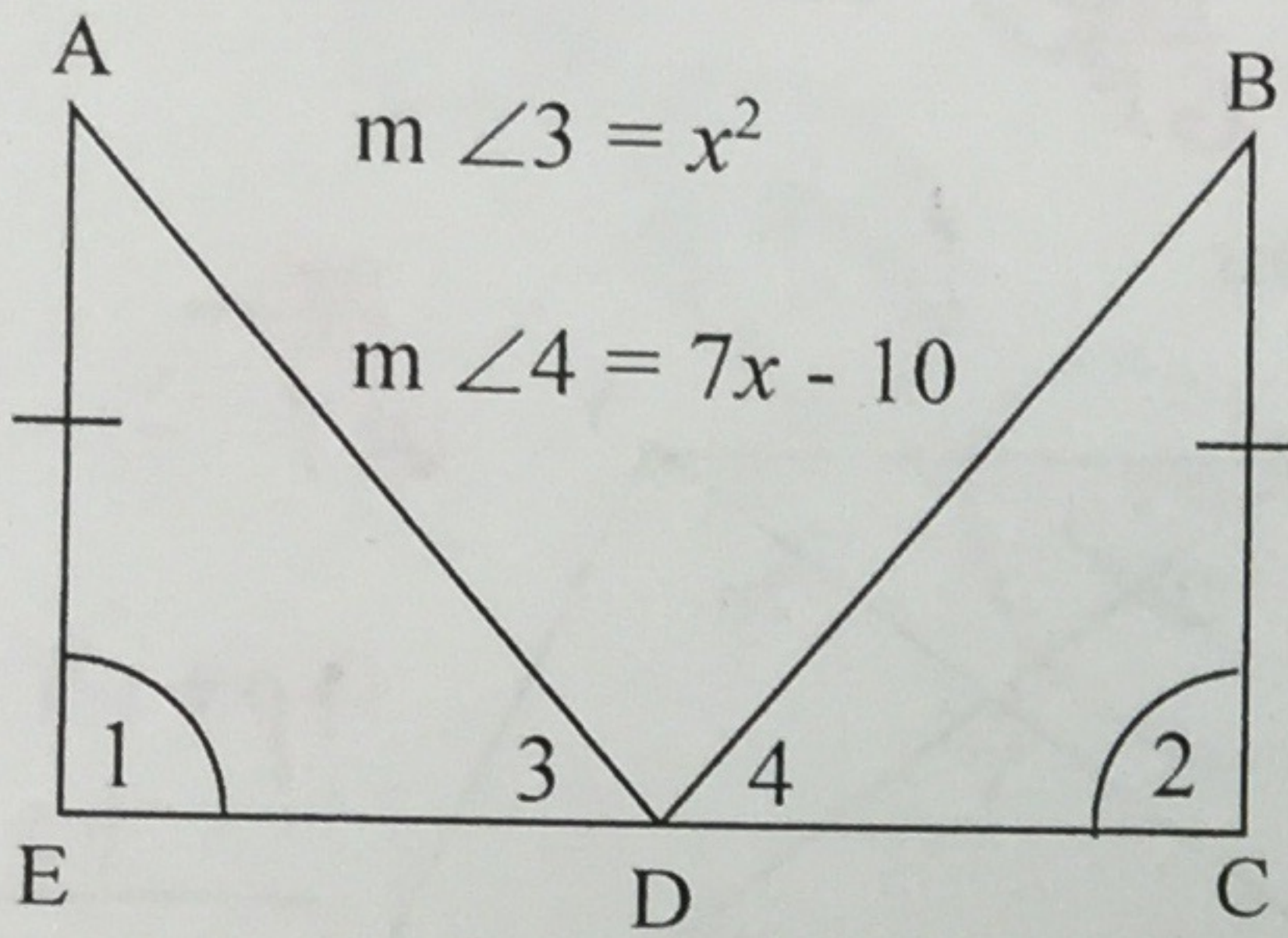
10. What information is missing to use SAS?

$\angle CDB \cong \angle DBA$



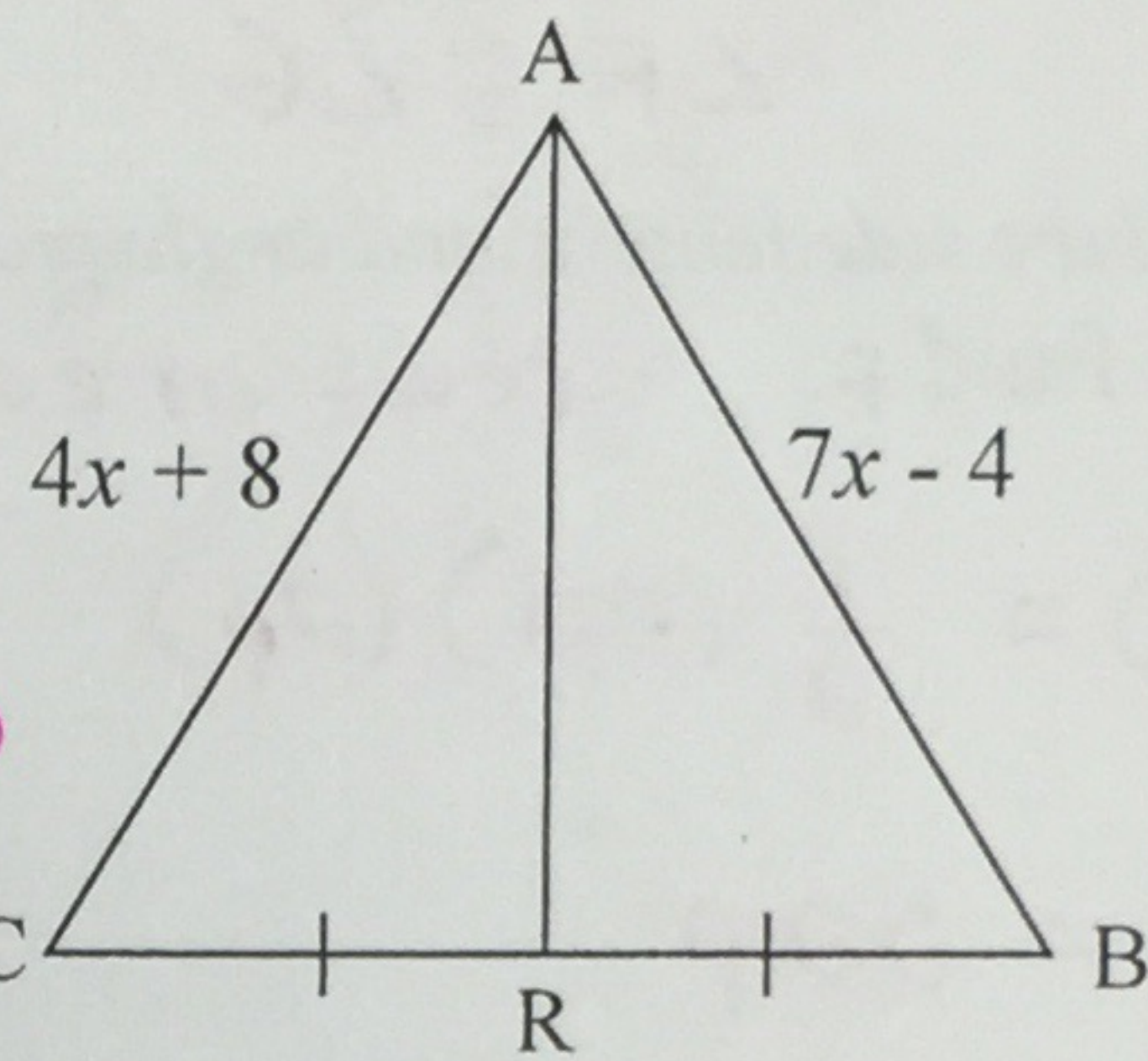
IV. For which value(s) of  $x$  are the triangles congruent?

3.  $x = 2 \text{ or } 5$  \* Don't worry about



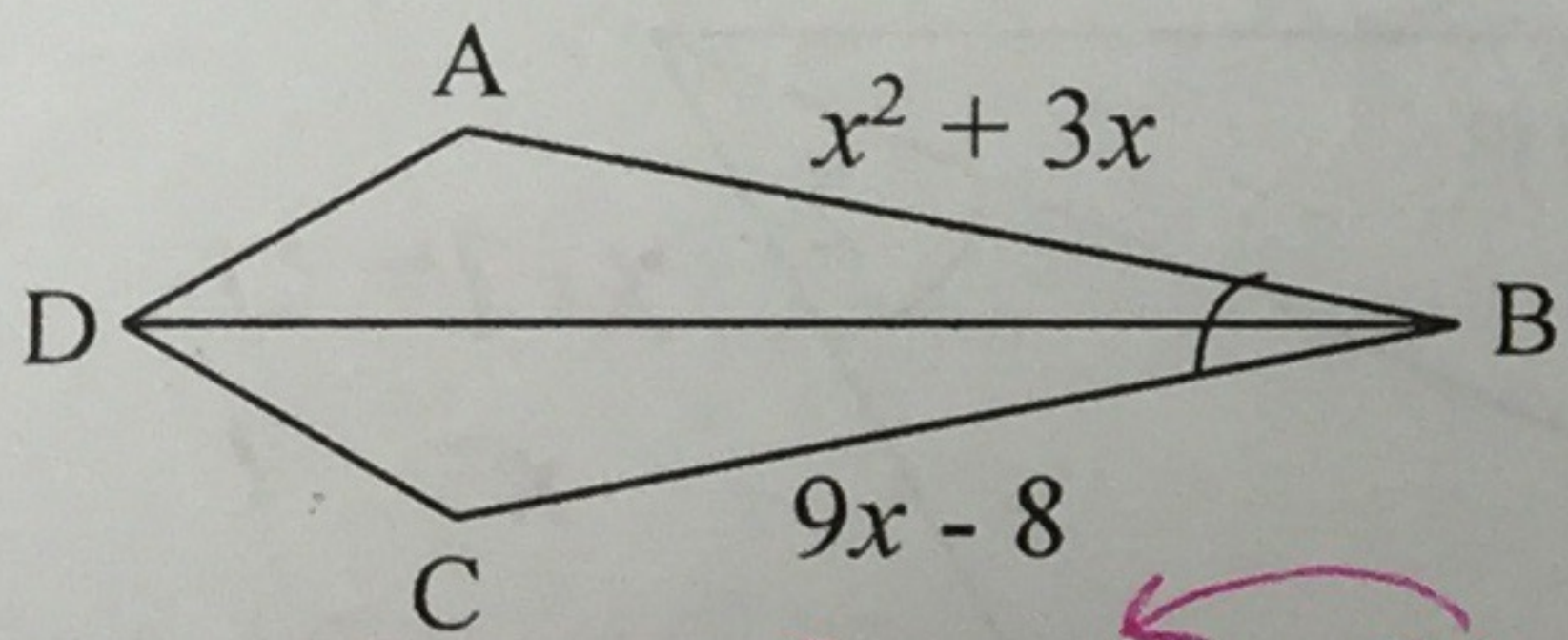
$m \angle 3 = x^2$   
 $m \angle 4 = 7x - 10$   
 $x^2 = 7x - 10$   
 $x^2 - 7x + 10 = 0$   
 $(x-2)(x-5) = 0$   
 $x-2=0 \quad x-5=0$   
 $x=2 \text{ or } x=5$

4.  $x = 4$

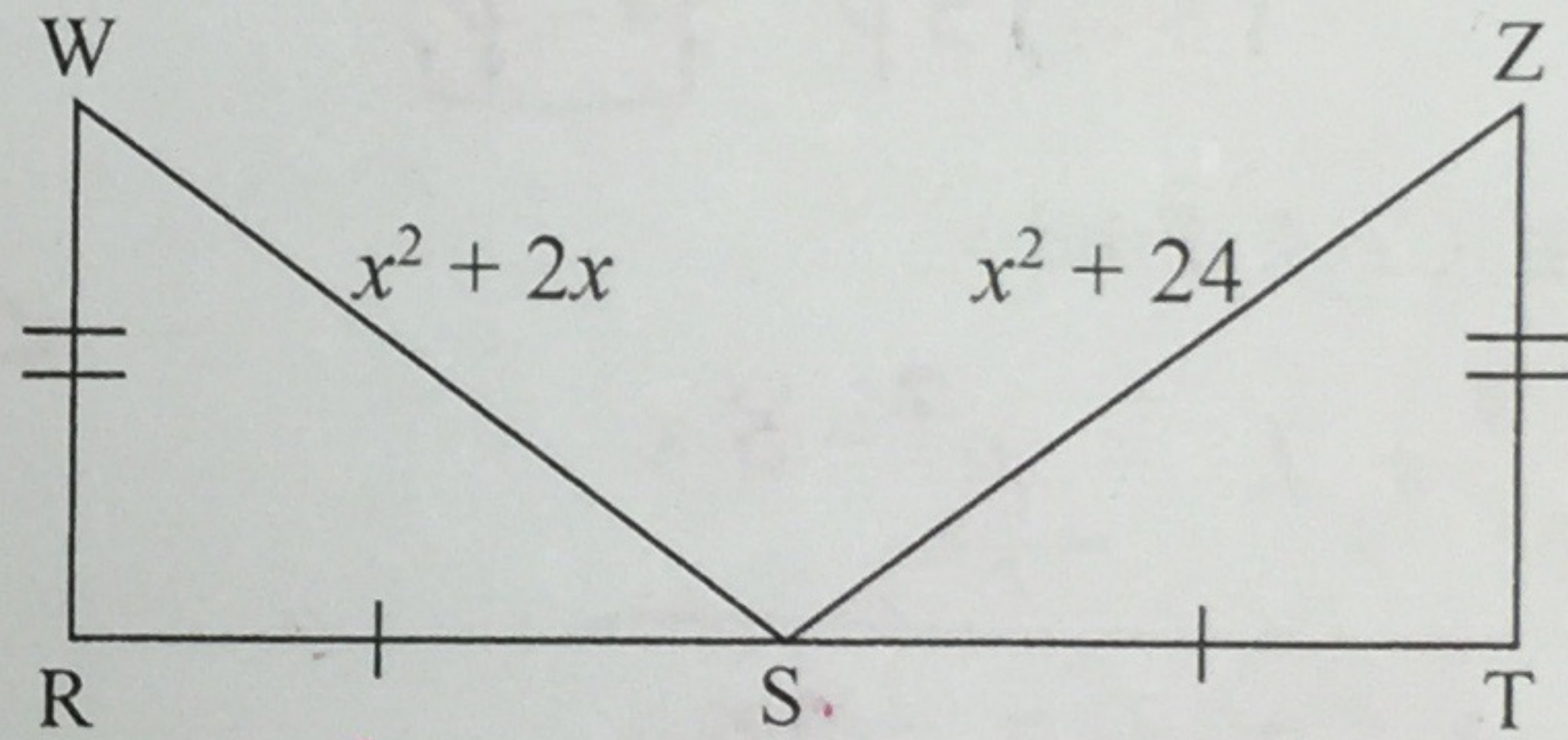


$4x+8 = 7x-4$   
 $12 = 3x$   
 $4 = x$

5.  $x = 2 \text{ or } 4$  \* Don't worry about



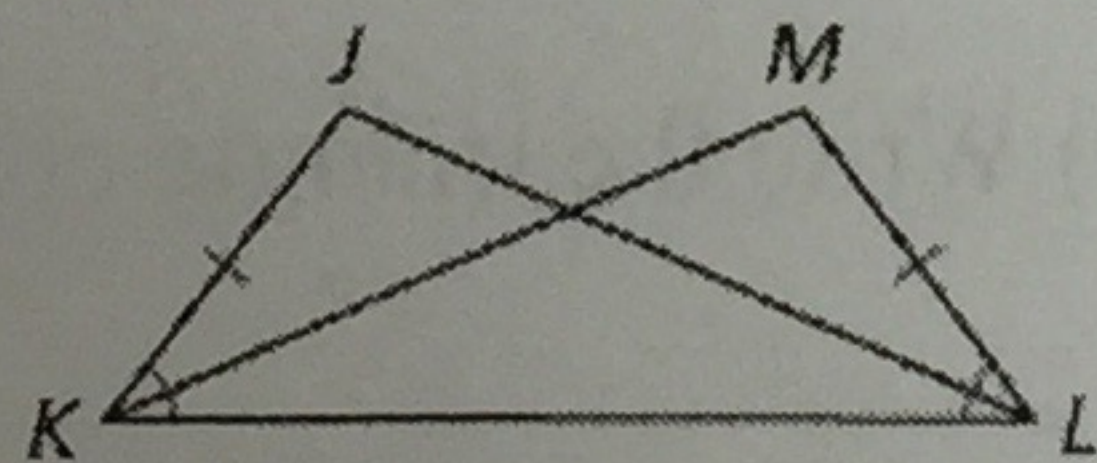
$x^2 + 3x = 9x - 8$   
 $x^2 - 6x + 8 = 0$   
 $(x-2)(x-4) = 0$



$x^2 + 2x = x^2 + 24$   
 $2x = 24$   
 $x = 12$

© I can write a two-column proof over congruent triangles

11.  
 Given:  $\overline{JK} \cong \overline{ML}$ ,  $\angle JKL \cong \angle MLK$   
 Prove:  $\triangle JKL \cong \triangle MLK$



S	R
$\overline{JK} \cong \overline{ML}$	<del>given</del> given
$\angle JKL \cong \angle MLK$	given
$\overline{KL} \cong \overline{KL}$	reflexive
$\triangle JKL \cong \triangle MLK$	SAS

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

We did this last week.