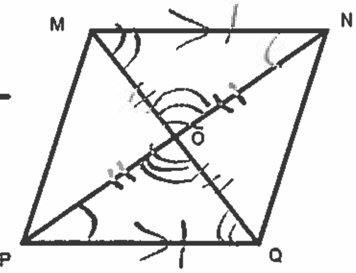
Geometry 4.1 and 4.2-Congruent Figures and Proving Triangles Congruent Day 2

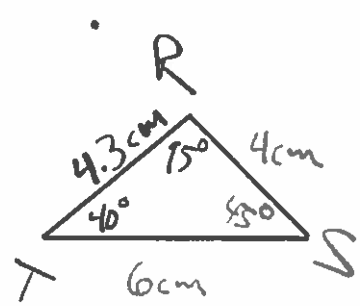


	Statements	Reasons
1	O is the midpoint of $\overline{MQ}$ and $\overline{PN}$. $\overline{MN} \cong \overline{QP}$ and $\overline{MN} // \overline{PQ}$	Given
2	$\angle MNP \cong \angle NPQ$ $\angle PQO \cong \angle NMO$	Alt. Int. ∠s Thm
3	$\overline{PO} \cong \overline{ON}$, $\overline{MO} \cong \overline{OQ}$	Def. of midpt.
4	$\angle MON \cong \angle POQ$	Vert. ∠s Thm
5	$\triangle MNO \cong \triangle QPO$	Def. of ≅ Δs

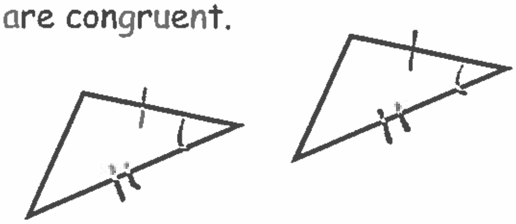
Turn to p. 121 and look at problem #22.

Is it possible to guarantee TRIANGLE congruence without proving six congruent statements?

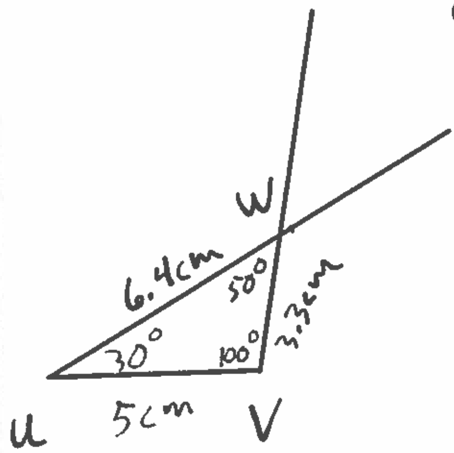
22a. In $\triangle RST$, RS = 4cm, $m\angle S = 45^o$, and ST = 6cm.



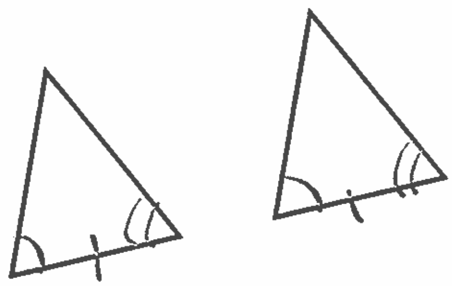
- SAS Congruence Postulate:
  If two sides and the included angle of one triangle are congruent to two sides and the included angle of another triangle, then the triangles are congruent.



22b. In $\triangle UVW$, $m\angle U = 30^o$, UV = 5cm, and $m\angle V = 100^o$.

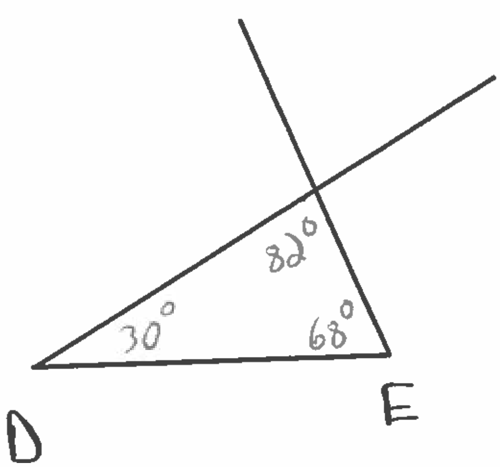


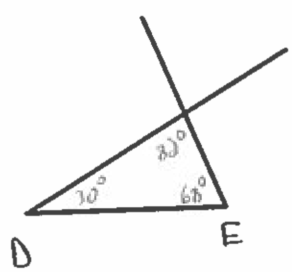
- ASA Congruence Postulate:
  If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, then the triangles are congruent.

- 

22c. In $\triangle DEF$, $m\angle D = 30^o$, $m\angle E = 68^o$, and $m\angle F = 82^o$.

- AAA does NOT ensure triangle congruence!

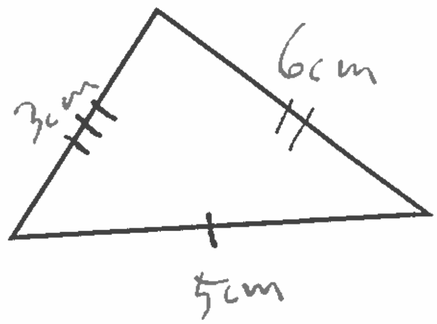


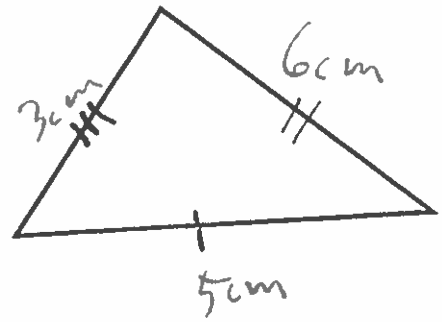


Geometry 4.1 and 4.2-Congruent Figures and Proving Triangles Congruent Day 2

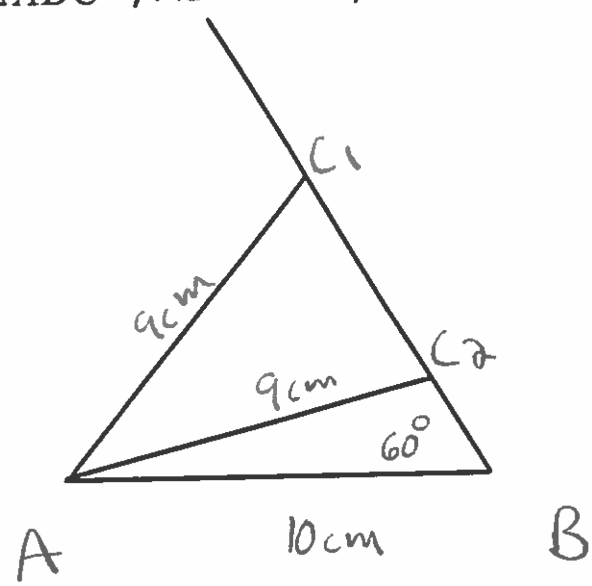
22d. In $\triangle XYZ$, XY = 3cm, YZ = 5cm, and XZ = 6cm.

- SSS Congruence Postulate:
  If three sides of one triangle are congruent to three sides of another triangle, then the triangles are congruent.





In $\triangle ABC$, AB = 10cm, $m\angle B = 60^o$, and AC = 9cm.



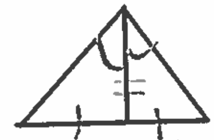
- SSA does NOT ensure triangle congruence!

Geometry 4.1 and 4.2-Congruent Figures and Proving Triangles Congruent Day 2

p. 123-124 CE #1-9

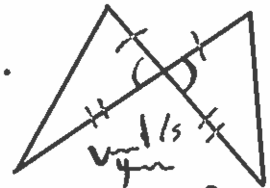
1. Yes
SAS ≅ Post

2. Yes
SAS ≅ Post

3. 
No!! ∠ not included!

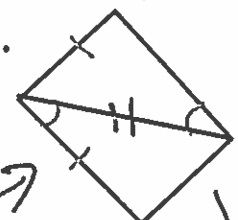
4. Yes
ASA ≅ Post.

5. Yes
SSS ≅ Post

6. 
Yes SAS ≅ Post

7. No!!
∠ is not included

8. No!!
∠ is not included in both!

9. 
No!!

Assignment #30

R and TN p. 122-123.
Complete p. 124-126 WE #1-19, 22, 23.

Update your Chapter 4 Study Guide!