WARMUP

Algebra Review: Simplifying and Multiplying Radicals

1) $\sqrt{288}$

2) $\sqrt{8}$

3) $3\sqrt{5} \cdot \sqrt{12}$

4) $\sqrt{10} \cdot -5\sqrt{20}$

5) $\sqrt{15} \cdot -2\sqrt{3}$

6) $\sqrt{2} \cdot \sqrt{8}$

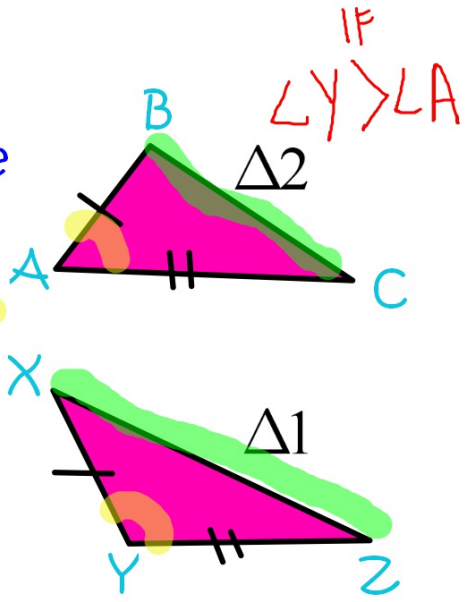
SECTION 6.5: INEQUALITIES FOR TWO TRIANGLES

Standards:

6.0: Students know and are able to use the triangle inequality theorem.

SAS INEQUALITY THEOREM

If 2 sides of 1 triangle are congruent to 2 sides of another triangle, but the included angle of the first triangle is larger than the included angle of the second, then the third side of the first triangle is longer than the third side of the second triangle .



$\overline{AB} \cong \overline{XY}$ and

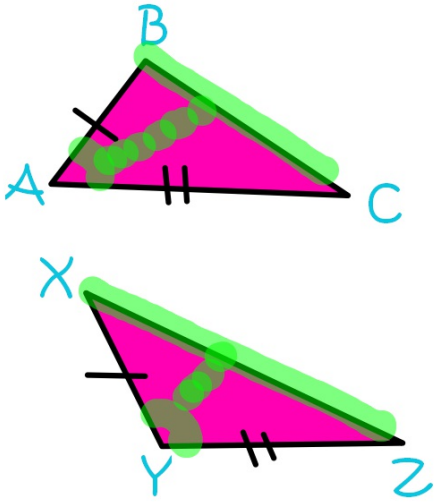
$\overline{AC} \cong \overline{YZ}$ but

$m(\angle A) < m(\angle Y)$ so

$BC < XZ$

SSS INEQUALITY THEOREM

If two sides of one triangle are congruent to two sides of another triangle but the third side of the first triangle is longer than the third side of the second, then the included angle of the first triangle is larger than the included angle of the second.



$\overline{AB} \cong \overline{XY}$ and

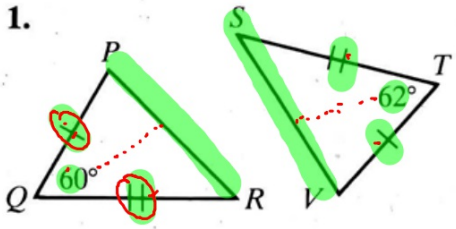
$\overline{AC} \cong \overline{YZ}$ but

$XY > BC$ so

$\angle Y > \angle A$

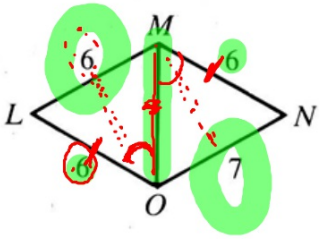
What can you deduce? Name the theorem that supports your answer.

1.



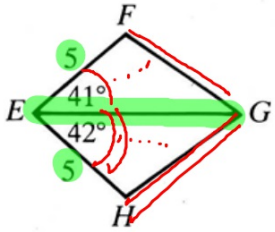
✦ SV > PR
SAS Ineq. Thm.

2.



✦ m(∠OMN) > m(∠LMO)
SSS Ineq. Thm.

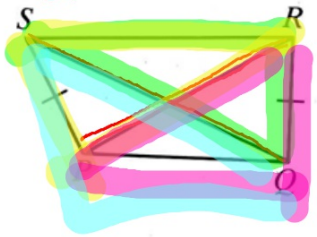
3.



✦ GH > GF
SAS Ineq. Thm.

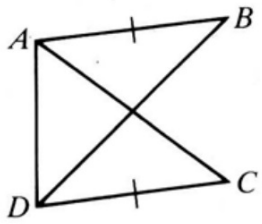
What can you deduce? Name the theorem that supports your answer.

4. $PR < SQ$



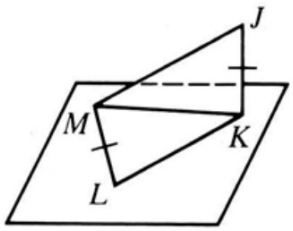
$m(\angle PQR) < m(\angle QPS)$
$m(\angle PSR) < m(\angle QRS)$
Both SSS Inequal. Thm

5. $m\angle BAD = 95; m\angle CDA = 87$



BD > CA
SAS Inequal. Thm.

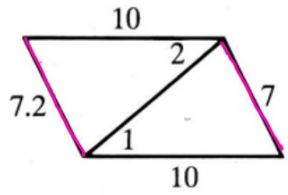
6. $m\angle JKM > m\angle LMK$



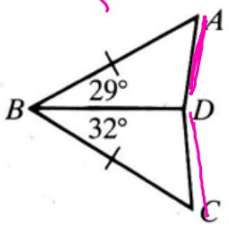
JM > LK
SAS Ineq. Thm.

Complete each statement by writing <, =, or >.

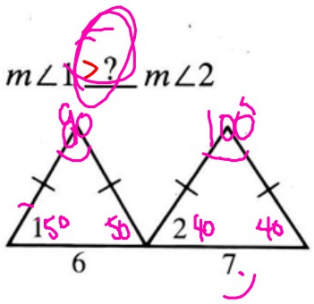
7. $m\angle 1$? $m\angle 2$



8. AD ? DC

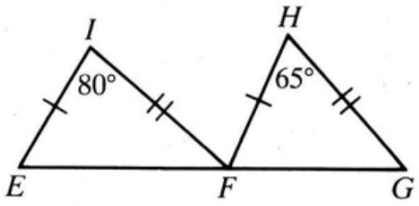


9. $m\angle 1$? $m\angle 2$

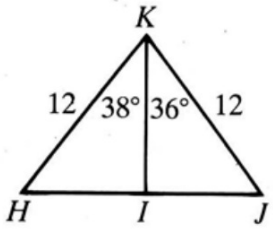


Complete each statement by writing $<$, $=$, or $>$.

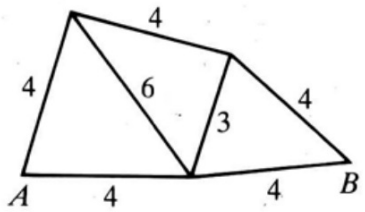
10. EF ?> FG



11. HI ?> IJ



12. $m\angle A$?> $m\angle B$



HOMEWORK

Assignment #6.5a

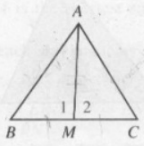
- Page 231 #1-8
- Pages 235-236 #1-18

WED 12/15 - CH 6 QUIZ

FRI 12/16 - TEST CH 6

What can you deduce? Name the theorem that supports your answer.

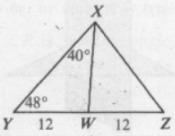
1. Given: $\overline{AM}$ is a median of $\triangle ABC$; $AB > AC$



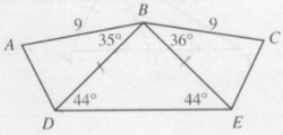
2. Given: $\square RSTV$; $m\angle TSR > m\angle VRS$

Complete the statements by writing <, =, or >.

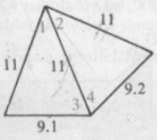
3. XY ? XZ; XW ? 12



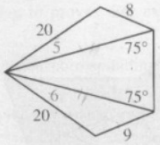
4. AD ? CE



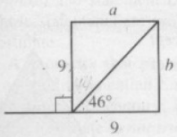
5. $m\angle 1$? $m\angle 2$; $m\angle 3$? $m\angle 4$



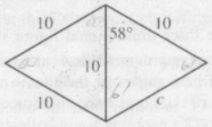
6. $m\angle 5$? $m\angle 6$



7. a ? b



8. c ? 10



Chapter Review

Complete each statement by writing <, =, or >.

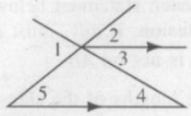
1. $m\angle 1$? $m\angle 5$

2. $m\angle 1$? $m\angle 2$

3. $m\angle 3$? $m\angle 4$

4. $m\angle 5$? $m\angle 2$

5. If $a > b$, $c < b$, and $d = c$, then a ? d.



Given: All registered voters must be at least 18 years old.
What, if anything, can you conclude from each additional statement?

6. Eric is 19 years old.

7. Bonnie is not registered to vote.

8. Will is 15 years old.

9. Barbara is a registered voter.

10. Write the letters (a)–(d) in an order that completes an indirect proof o the statement: If $n^2 + 6 = 32$, then $n \neq 5$.
(a) But this contradicts the fact that $n^2 + 6 = 32$.
(b) Our temporary assumption must be false, and it follows that $n \neq 5$
(c) Assume temporarily that $n = 5$.
(d) Then $n^2 + 6 = 31$.

11. In $\triangle TOP$, if $OT > OP$, then $m\angle P >$?.

12. In $\triangle RED$, if $m\angle D < m\angle E$, then $RD >$?.

13. Points X and Y are in plane M. If $\overline{PX} \perp$ plane M, then PX ? PY.

14. Two sides of a triangle have lengths 6 and 8. The length of the third sid must be greater than ? and less than ?.

Complete each statement by writing <, =, or >.

15. If $\overline{AB} \cong \overline{AC}$ and $m\angle 1 > m\angle 2$, then BT ? CT.

16. If $\overline{TB} \cong \overline{TC}$ and $AB < AC$, then $m\angle 3$? $m\angle 4$.

17. If $\angle 1 \cong \angle 2$ and $\angle 3 \cong \angle 4$, then AB ? AC.

18. If $\overline{TB} \cong \overline{TC}$ and $m\angle 3 > m\angle 4$, then AB ? AC.