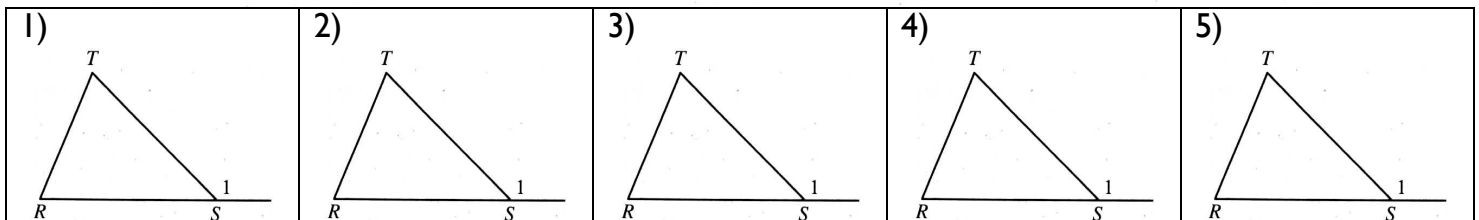


Inequalities in Geometry

For use after Chapter 6

Complete.

- In $\triangle RST$, $m\angle 1 > m\angle$ _____.
- In $\triangle RST$, if $RT < RS$, then $m\angle T$ _____ $m\angle TSR$.
- In $\triangle RST$, if $m\angle TSR < m\angle R$, then RT _____ ST .
- If $RS = 15$ and $ST = 12$, then the length of \overline{RT} must be greater than _____ and less than _____.
- If $m\angle 1 = 135$ and $m\angle R = 60$, then the longest side of $\triangle RST$ is _____.

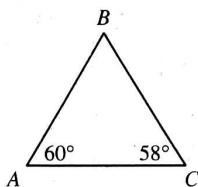


- Write (a) the contrapositive and (b) the inverse of "If point P is on \overline{AB} , then $AP + PB = AB$." Then complete part (c).

- _____
- _____
- Any statement and its _____ are logically equivalent.

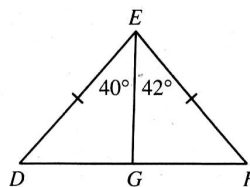
Complete the statements by writing $<$, $=$, or $>$.

7.



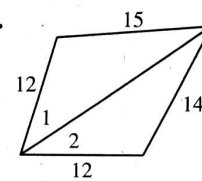
AB _____ AC

8.



DG _____ GF

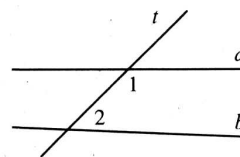
9.



$m\angle 1$ _____ $m\angle 2$

Complete the indirect proof.

- Given: Transversal t cuts lines a and b ; $a \not\parallel b$.
Prove: $\angle 1$ and $\angle 2$ are not supplementary.



Proof:

- Assume temporarily that _____.
- Then _____ since if two lines are cut by a transversal and same-side interior angles are supplementary, the lines are parallel.
- But this contradicts the given information that _____.
- Therefore the temporary assumption that _____ must be false. It follows that _____.

Practice 23

Inequalities in Triangles

Lessons 6-4, 6-5

The figures in these exercises are not drawn to scale. When solving a problem, use only the information given about the measures of angles and lengths of segments.

Complete the following statements about $\triangle XYZ$.

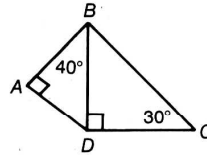
- If $m\angle 1 = 65$ and $m\angle 2 = 40$, the longest side is _____.
- If $XZ = XY$ and $m\angle 2 = 70$, the longest side is _____.
- If $m\angle 1 = 90$, the longest side is _____.
- If $XZ = 7$, $XY = 9$, and $ZY = 11$, the largest angle is _____.
- If $\overline{XZ} \cong \overline{ZY}$ and $m\angle 3 = 40$, the largest angle is _____.

Is it possible for a triangle to have sides with the lengths indicated?

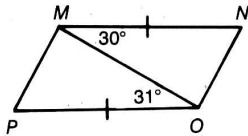
- 13, 15, 20 _____
- 6, 6, 11 _____
- 4, 9, 13 _____

Exercises 9 and 10 refer to the figure at the right.

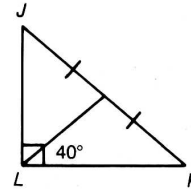
- Name the shortest segment. _____
- Name the longest segment. _____



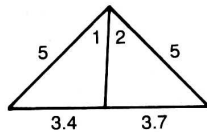
- Which is longer, \overline{MP} or \overline{NO} ? _____



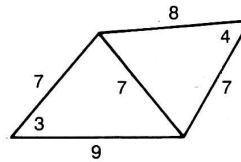
- Which is longer, \overline{JL} or \overline{LK} ? _____



- Which is larger, $\angle 1$ or $\angle 2$? _____



- Which is larger, $\angle 3$ or $\angle 4$? _____



1)	2)	3)	4)
5)	6)	7)	8)