

Inequalities in Geometry Wkst

1. $m\angle R$ Or $m\angle T$
2. $>$
3. $<$
4. greater than 3 and less than 27
5. \overline{RS}
6.
 - a. If $AP + PB \neq AB$, then point P is not on \overline{AB}
 - b. If point P is not on \overline{AB} , then $AP + PB \neq AB$
 - c. Contrapositive
7. $<$
8. $<$
9. $>$
10. Given: Transversal t cuts lines a and b;
Prove: $\angle 1$ and $\angle 2$ are not supplementary
 1. $\angle 1$ and $\angle 2$ are supplementary
 2. $a \parallel b$
 3. $a \not\parallel b$
 4. $\angle 1$ and $\angle 2$ are supplementary
 $\angle 1$ and $\angle 2$ are not supplementary

Page 236

1. $>$
2. $<$
3. $>$
4. $<$
5.
 - a. If point P is not on \overline{AB} , then $AB \leq AP$
 - b. If $AB \leq AP$, then point P is not on \overline{AB} .
6.
 - a. No concl.
 - b. $AB > AP$
 - c. P is not on AB
 - d. No concl.
7. 6, 36
8. \overline{BC}
9. \overline{DG}
10. \overline{JK}
11. VOE, VEO
12. UO, UE
13. UE, UO

14. VUE

15 Assume temporarily that $\angle C$ and $\angle D$ are both right angles. Then $\overline{AD} \perp \overline{DC}$, $\overline{BC} \perp \overline{DC}$, and $\overline{AD} \parallel \overline{BC}$. (In a plane, 2 lines perpendicular to the same line are parallel). But this contradicts the given fact that a trapezoid only has one pair of parallel sides. The temporary assumption must be false. It follows that $\angle C$ and $\angle D$ are not both right angles.

16.

Statements	Reasons
1. S is the midpoint of \overline{RT}	1. Given
2. $\overline{RS} \cong \overline{ST}$	2. Def. of a midpoint
3. $\overline{RX} \cong \overline{TY}$, $XS > YS$	3. Given
4. $m\angle R > m\angle T$	4. SSS Inequality Theorem