Def. Inequality

For any numbers a and b, $a > b$ if and only if there is a positive number c such that $a = b + c$

Properties of Inequalities for Real Numbers	
	For all numbers a, b, and c
Comparison Property	$a < b$, $a = b$, or $a > b$
Transitive Property	**1.** If $a < b$ and $b < c$, then $a < c$. **2.** If $a > b$ and $b > c$, then $a > c$.
Addition and Subtraction Properties	**1.** If $a > b$, then $a + c > b + c$ and $a - c > b - c$. **2.** If $a < b$, then $a + c < b + c$ and $a - c < b - c$.
Multiplication and Division Properties	**1.** If $c > 0$ and $a < b$, then $ac < bc$ and $\frac{a}{c} < \frac{b}{c}$. **2.** If $c > 0$ and $a > b$, then $ac > bc$ and $\frac{a}{c} > \frac{b}{c}$. **3.** If $c < 0$ and $a < b$, then $ac > bc$ and $\frac{a}{c} > \frac{b}{c}$. **4.** If $c < 0$ and $a > b$, then $ac < bc$ and $\frac{a}{c} < \frac{b}{c}$.

Th. 5.8 The Ext. ∠ Inequality Th.

If an ∠ is an ext. ∠ of a Δ, then its measure is greater than the measure of either of its corr. remote int. ∠'s.

Th. 5.9

If 1 side of a Δ is longer than the other side, the the $\angle$ opposite the longer side has a greater measure than the $\angle$ opposite the shorter side.

Th. 5.10

If 1 $\angle$ of a Δ has a greater measure than another $\angle$, then the side opp. the greater $\angle$ is longer than the side opp. the lesser $\angle$.