

Review

① $\angle A < \angle B$
 $\angle B < \angle C$
 $\therefore \angle A < \angle C$

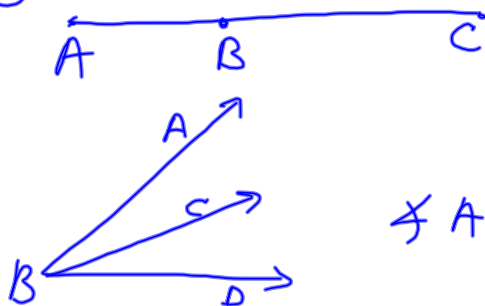
Transitive Property
of Inequality.

② $\angle A < \angle B$
 $\angle B = \angle C$
 $\therefore \angle A < \angle C$

Substitution

③ Trichotomy Postulate
 $a > b$, $a < b$, or $a = b$

④

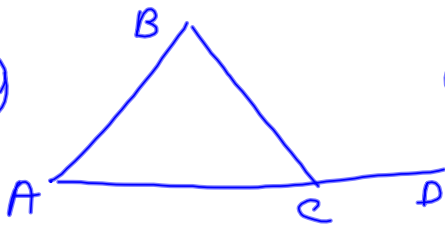


$$AC > AB$$

a Whole is greater
than its parts

$$\angle ABD > \angle ABC$$

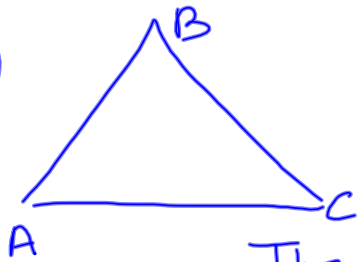
⑤



$$m\angle BCD > m\angle A$$
$$> m\angle B$$

Exterior angle Inequality Thm
"An exterior angle is greater than
non-adjacent interior angles."

⑥



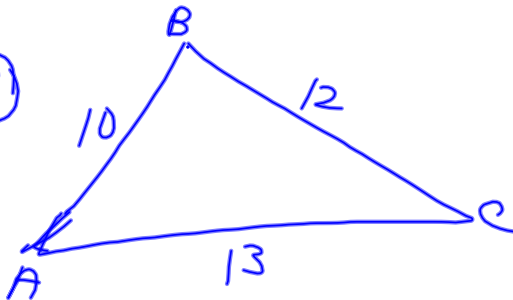
$$AB + BC > AC$$

"Triangle Inequality Thm"

The sum of any 2 sides is $>$ third.

also difference 3rd side $<$ sum

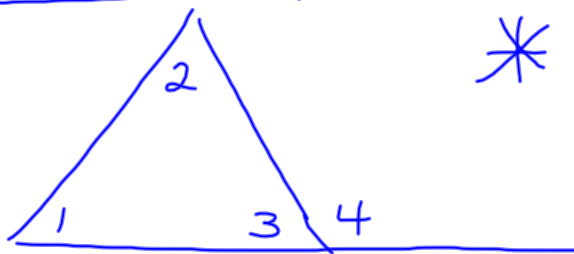
⑦



$$\angle C < \angle A < \angle B$$

"The smallest angle is across from the shortest side."

Exterior Angle Theorem



* "The exterior angle is equal to the sum of the non adjacent interior angles."

$$\angle 4 = \angle 1 + \angle 2$$

$$\angle 1 + \angle 2 + \angle 3 = 180$$

$$\angle 4 + \angle 3 = 180$$

$$\angle 1 + \angle 2 + \angle 3 = \angle 4 + \angle 3$$

$$\begin{array}{r} -\angle 3 \qquad \qquad -\angle 3 \\ \hline \end{array}$$

$$\angle 1 + \angle 2 = \angle 4$$