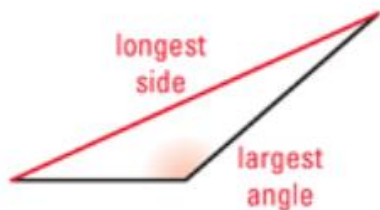
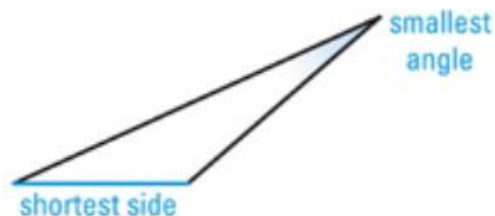


5.5 Use Inequalities in a Triangle



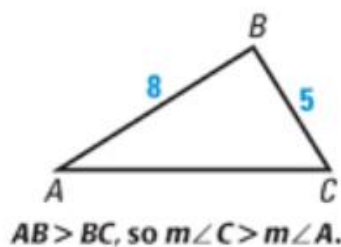
The longest side and largest angle are opposite each other.



The shortest side and smallest angle are opposite each other.

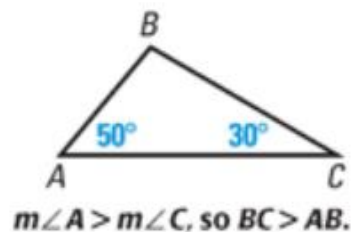
THEOREM 5.10

If one side of a triangle is longer than another side, then the angle opposite the longer side is larger than the angle opposite the shorter side.



THEOREM 5.11

If one angle of a triangle is larger than another angle, then the side opposite the larger angle is longer than the side opposite the smaller angle.



THEOREM 5.12 Triangle Inequality Theorem

The sum of the lengths of any two sides of a triangle is greater than the length of the third side.

$$AB + BC > AC$$

$$AC + BC > AB$$

$$AB + AC > BC$$

