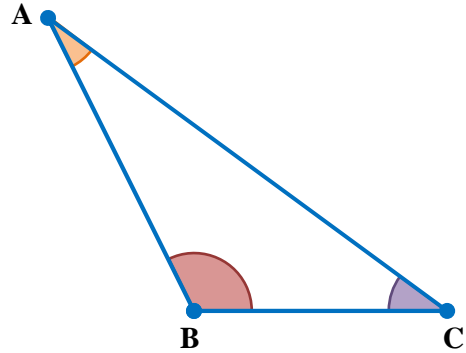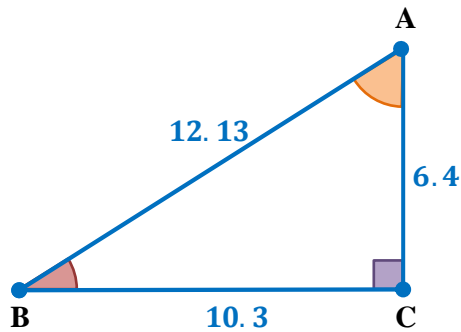# INEQUALITIES IN ONE TRIANGLE Guide Notes

ANGLE – SIDE THEOREM

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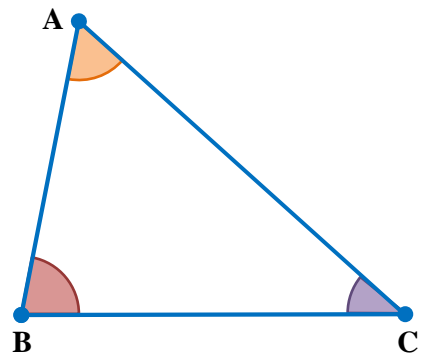then the angle opposite the longer side is larger than the angle opposite the shorter side."

A

B   C

Sample Problem 1: Write the angles in order from smallest to largest.
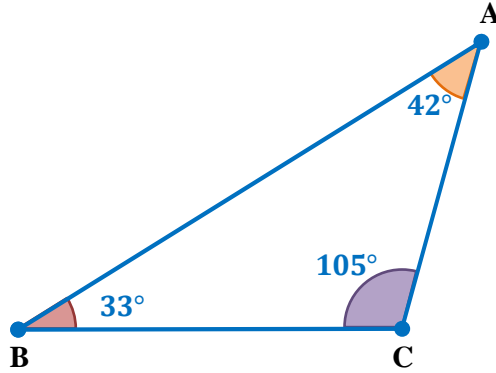
A

12.13

6.4

B 10.3 C

CONVERSE OF ANGLE – SIDE THEOREM

"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."

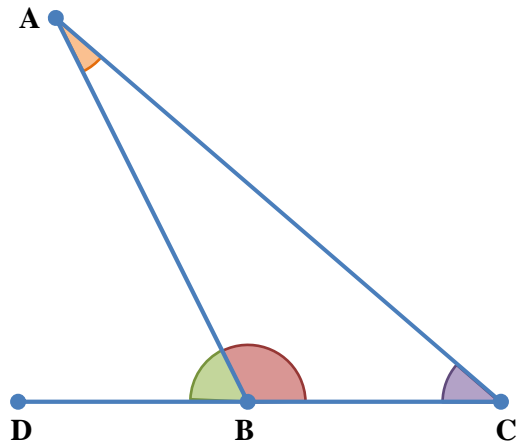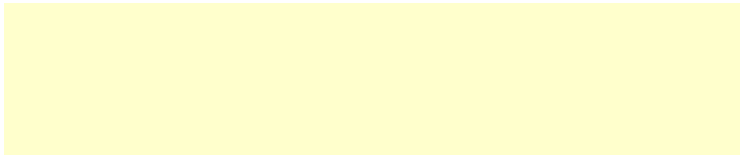A

B   C

1

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INEQUALITIES IN ONE TRIANGLE Guide Notes

Sample Problem 2: Write the sides in order from shortest to longest.
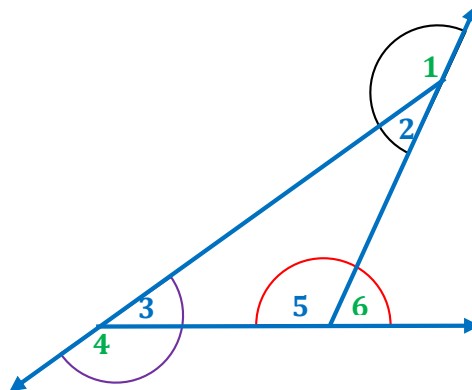
EXTERIOR ANGLE INEQUALITY THEOREM

"The measure of an exterior angle of a triangle is greater than the measure of either of its remote interior angles."

Sample Problem 3: Determine the smallest and the largest angles.
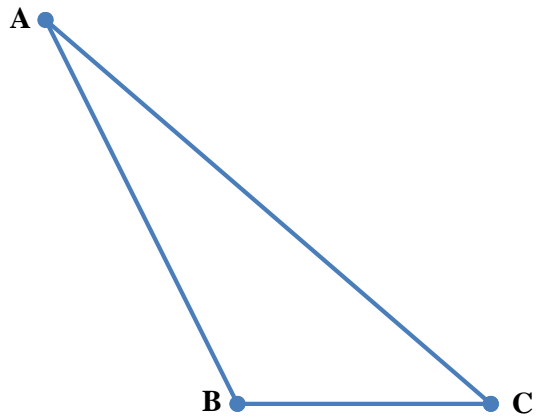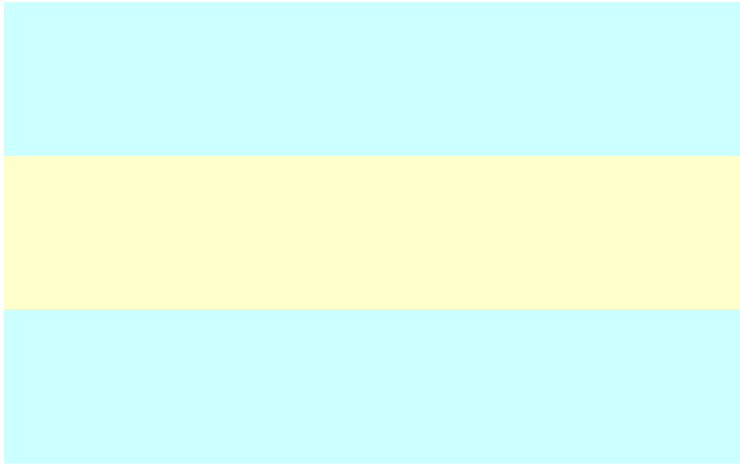
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INEQUALITIES IN ONE TRIANGLE Guide Notes

TRIANGLE INEQUALITY THEOREM

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

Sample Problem 4: A triangle has one side of length 12 and another of length 8. Identify the possible lengths of the third side.