Inequality: 6 $\cancel{=}$ 4
   * For any real numbers a and b, a > b iff there
     is a positive number x, such that a = b + c.

   Example: If 6 = 4 + 2, 6 > 4 and 6 > 2

   Inequality Properties from Algebra will be
   applied to measures of angles and sides.

Comparison Property:
  * a < b, a = b, or a > b

Transitive Property:
  * If a < b and b < c, then a < c

  * If a > b and b > c, then a > c

Addition & Subtraction Properties:
  * If a > b, then a + c > b + c and a -c > b - c
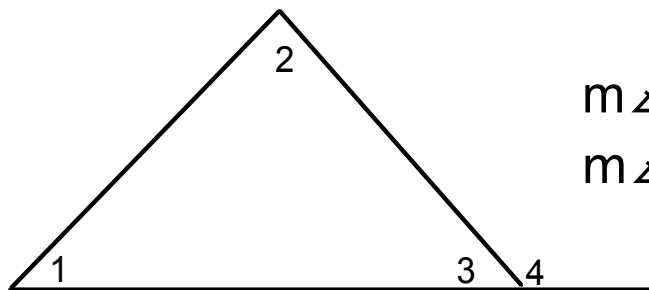 * If a < b, then a + c < b + c and a -c < b - c

Multiplication and Division Properties:
  * If c > 0 and a < b, then ac < bc

  * If c > 0 and a > b, then ac > bc

  * If c < 0 and a < b, then ac > bc

  * If c < 0 and a > b, then ac < bc

Exterior Angle Inequality Theorem:
  * If an angle is an exterior angle of a
    triangle, then its measure is greater than
    each of the two remote interior angles.

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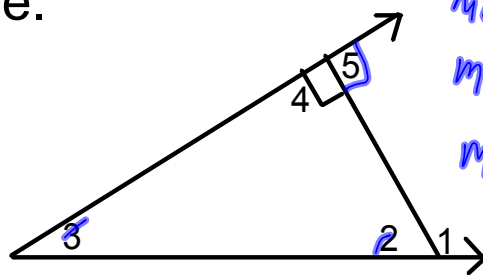
$m\angle 4 > m\angle 2$
$m\angle 4 > m\angle 1$

In a triangle the longest side is opposite the largest angle.

The smallest side is opposite the smallest angle. Smallest: ∠A
largest: ∠B

4.2   B
3.2
A   7.5   C

1. Determine which angle has the greatest measure.

5
4
3   2   1

m∠1 > m∠3
m∠1 > m∠4
m∠1 is the largest angle

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2. Determine the relationship between the measures of the given angles.

R   5.2   S   6.6
5.3   3.6   4.8   T
U   5.1   V   4.4

a. ∡RSU, ∡SUR
   5.3 > 5.2
   ∠RSU > ∠SUR

b. ∡TSV, ∡STV
   4.4 < 4.8
   ∠TSV < ∠STV

c. ∡RSV, ∡RUV
   5.3+5.1   5.2+4.8
   ∠RSV > ∠RUV
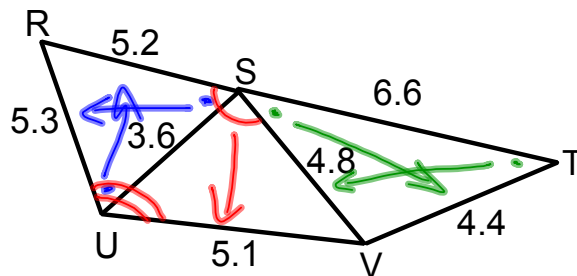
3. Ebony is following directions for folding a handkerchief to make a bandana for her hair. After she folds the handkerchief in half, the directions tell her to tie the two smaller angles of the triangle under her hair. If she folds the handkerchief with the dimensions shown, which two ends should she tie?

X and Z

Z ——22.6—— X

16   16

Y