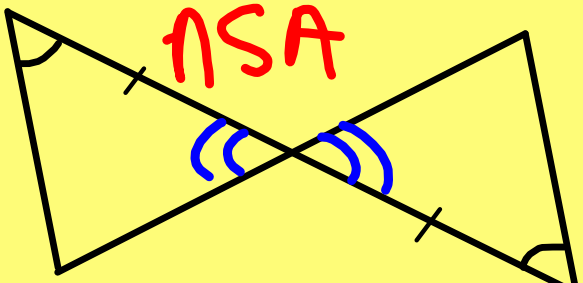
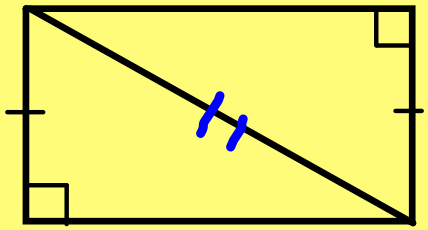
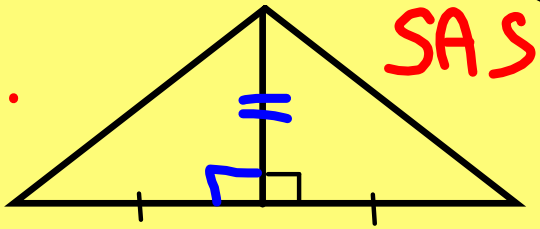
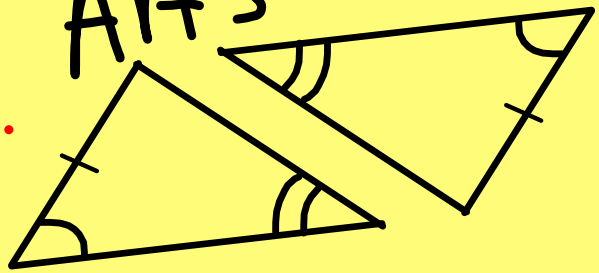
11/20/19 - Warm Up Problem

State the postulate or theorem that proves each pair of triangles is congruent.

1.  ASA

2.  HL

3.  SAS

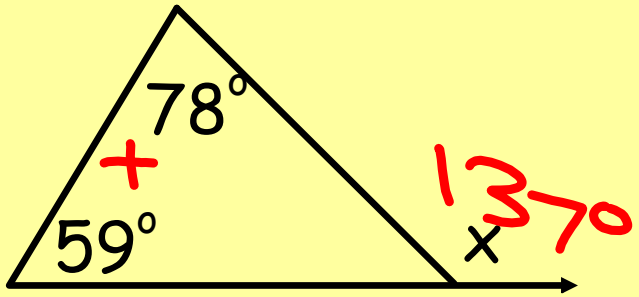
4.  AAS

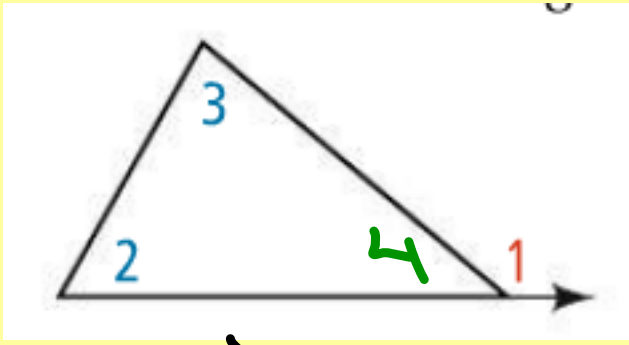
Concept 13 - Triangle Inequalities

Goal: Determine the largest and smallest sides & angles of a triangle

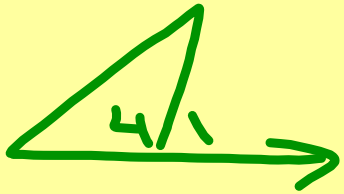
Corollary to the Triangle Exterior Angle Theorem

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

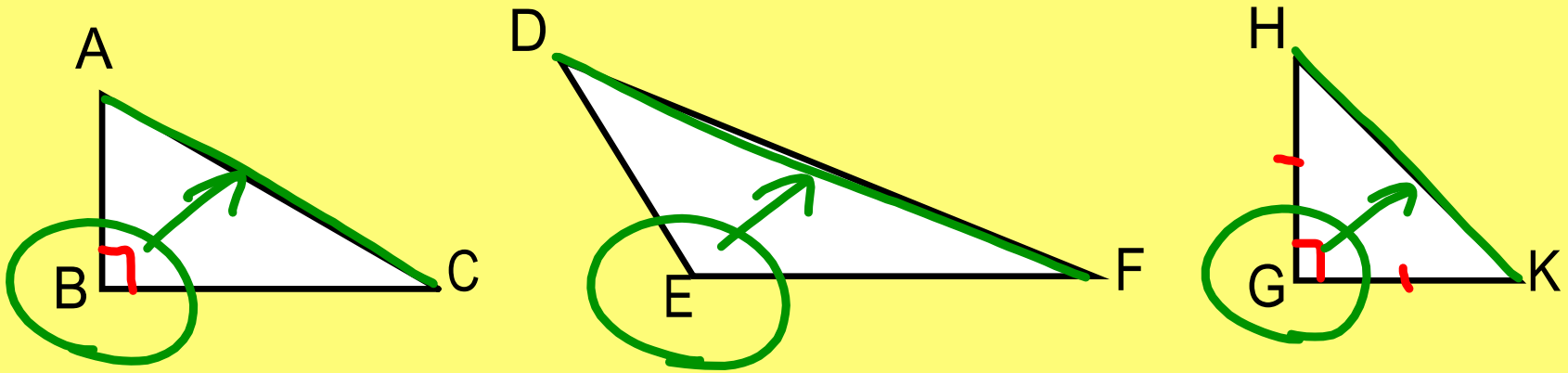




m∠1 > m∠2 and m∠3



Which angle must be the largest?
Which side must be the longest?



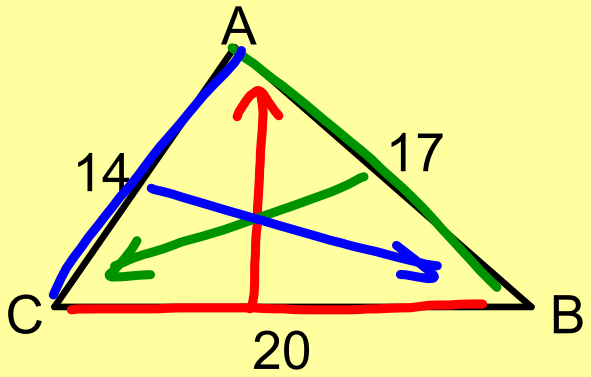
Theorem 5.10

If two sides of a triangle are not congruent, then the larger angle lies opposite the longer side.

Largest angle = ∠A

Mid-sized angle = ∠C

Smallest angle = ∠B



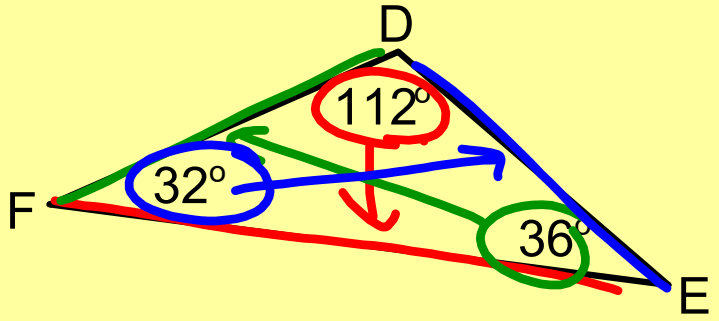
Theorem 5.11

If two angles of a triangle are not congruent, then the longer side lies opposite the larger angle.

Longest side = $\overline{FE}$

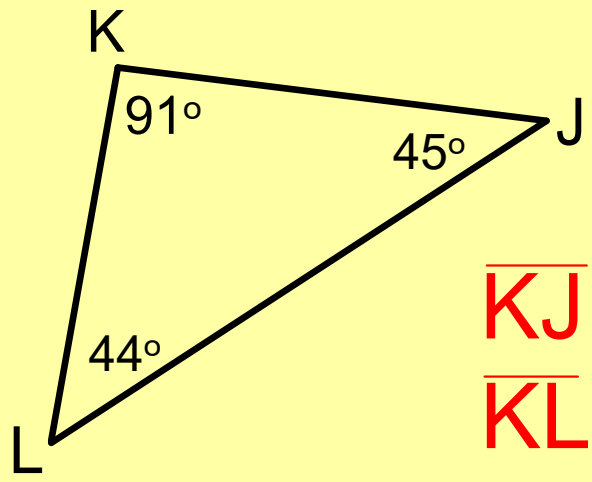
Medium side = $\overline{FD}$

Shortest side = $\overline{DE}$



TRY IT ON YOUR OWN...

List the sides in order from least to greatest.

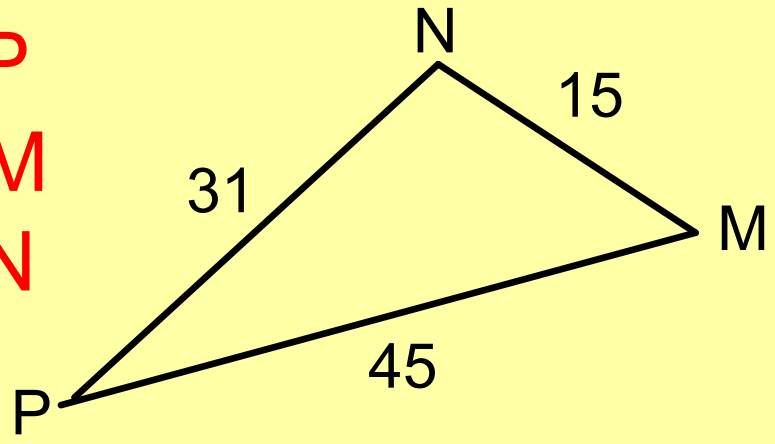


$\overline{KJ}$

$\overline{KL}$

$\overline{LJ}$

List the angles in order from smallest to largest.

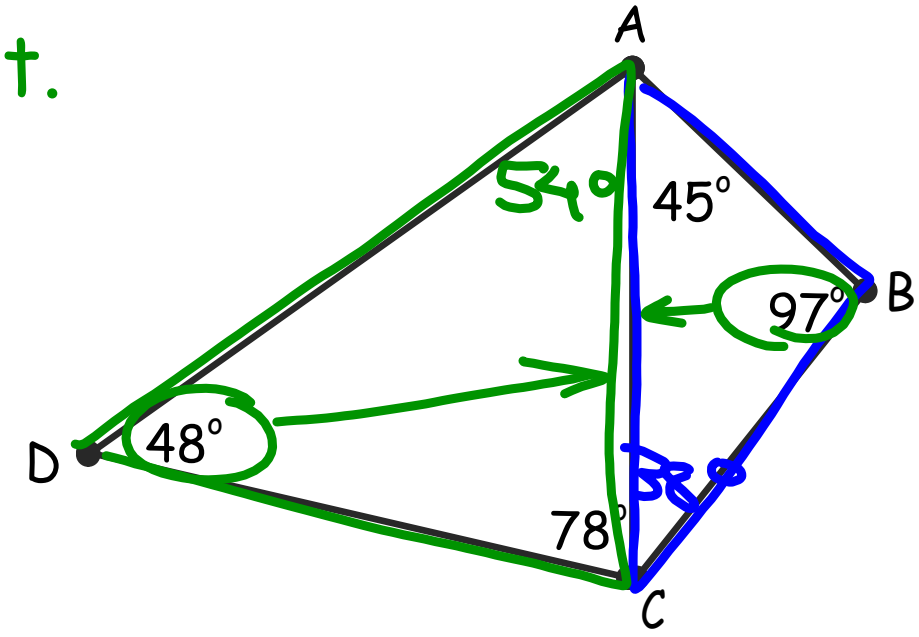


<P

<M

<N

Put all 5 sides in order from smallest to largest.



97
+45
142

AB
CB
AC
DC
AD

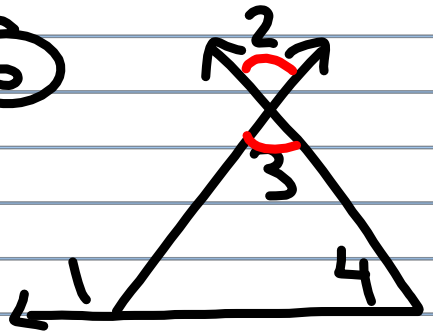
Assignment:

Section 5-6

pg. 328

(6-20) due by Tuesday 11/26

6



$m\angle 1 > m\angle 3$ and $m\angle 4$ because it is an exterior angle.

$\angle 2 \cong \angle 3$ because they are vertical.