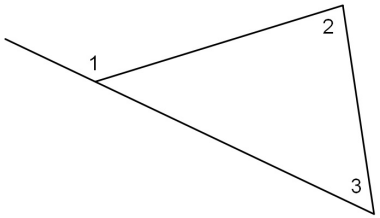


What is the measure of ∠1 equal to?

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

How does the measure of ∠1 compare to the measure of ∠2?

$\angle 1 > \angle 2$

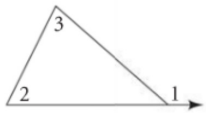
How does the measure of ∠1 compare to the measure of ∠3?

$\angle 1 > \angle 3$

Corollary **Corollary to the Triangle Exterior Angle Theorem**

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

$m\angle 1 > m\angle 2$ and $m\angle 1 > m\angle 3$



1. Draw a triangle and label the vertices A, B, and C. Make sure the triangle isn't equilateral or isosceles.

2. Measure each side to the nearest tenth of a centimeter.

AB = BC = AC =

3. Measure each angle to the nearest degree.

A = B = C =

4. List the sides in order from shortest to longest.

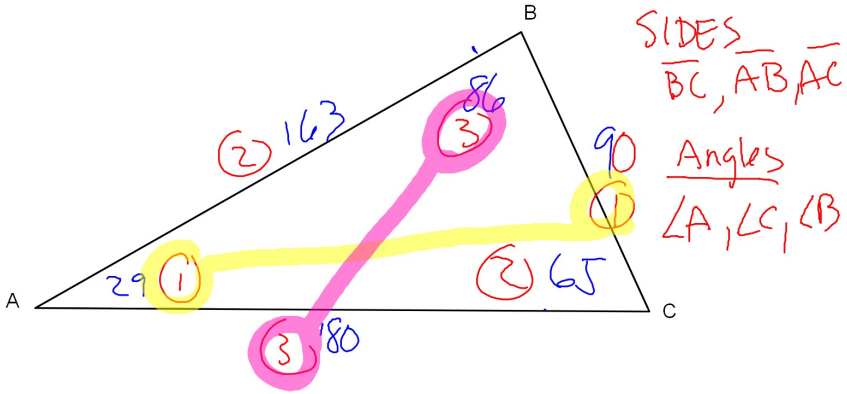
5. List the angles in order from smallest to largest.

6. Label on the triangle the shortest side with a 1 the longest side with a 3 and the middle side with a 2.

7. Label on the triangle the smallest angle with a 1 the largest angle with a 3 and the middle angle with a 2.

8. What do you think is the relationship between angle measure and side length?

Opposite the bigger angle is the longer side and Opposite the smaller angle is the shorter side.



In any triangle, if all you know are the angle measures how can you locate the longest side?

It is opposite the largest angle.

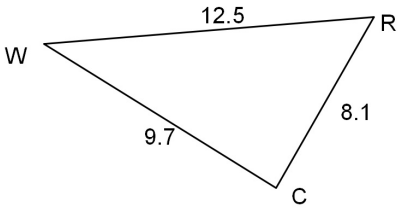
Why is the hypotenuse always the longest side of any right triangle?

It is opposite the right angle and in a right triangle the 90° angle is always the largest angle.

How can you locate the shortest side?

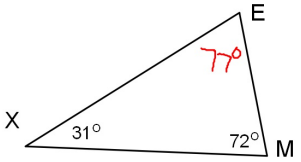
Opposite the smallest angle.

1. List the angles of this triangle in order from smallest to largest.



∠W, ∠R, ∠C

2. List the sides of this triangle in order from shortest to longest.



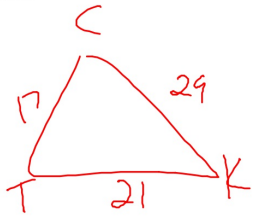
$\overline{EM}$ $\overline{XE}$ $\overline{Xm}$

3. Given the three sides of a triangle and their lengths are:

CK = 29 KT = 21 TC = 17

List the angles in order from smallest to largest.

∠K, ∠C, ∠T



4. Given the following measures of angles in a triangle are:
G = 84° H = 53° ∠B = 43°

List the sides in order from shortest to longest if the third vertex is B.

$\overline{GH}$, $\overline{GB}$, $\overline{BH}$