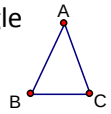
Geometry H
Section 4.1 Part 1 Notetaking Guide

Name : _____
Date : _____ Period : ____

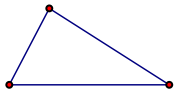
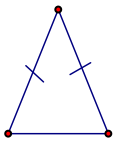
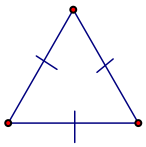
I can classify triangles and find measures of their angles

A ***triangle*** is a polygon with three sides. We name a triangle using the vertices of the triangle. For example, the triangle 

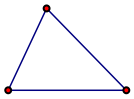
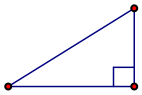
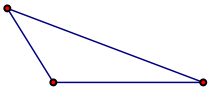
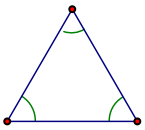
is called "triangle ABC" or using notation it would be $\triangle ABC$.

We can classify a triangle using its side lengths and its angle measures.

CLASSIFYING TRIANGLES BY SIDE LENGTH

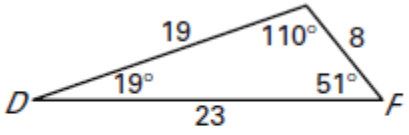
Scalene Triangle	Isosceles Triangle	Equilateral Triangle
		
A triangle in which all 3 sides have different lengths.	**A triangle with at least two congruent sides.**	**A triangle with all three sides that are congruent.**

CLASSIFYING TRIANGLES BY ANGLE MEASURE

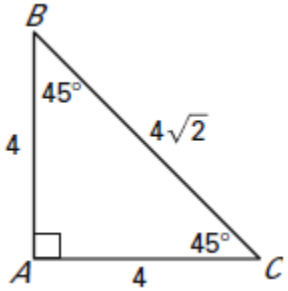
Acute triangle	Right Triangle	Obtuse Triangle	Equiangular Triangle
			
A triangle in which all angles are acute	**A triangle with exactly one right angle.**	**A triangle with exactly one obtuse angle.**	**A triangle with all three angles congruent.**

Example 1: Classify the triangle by its sides and by its angles.

a.

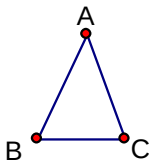


b.



Every triangle has three angles, one at each vertex inside the triangle. These angles are called ***interior angles.***

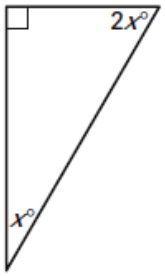
Theorem 4.1 – Triangle Sum Theorem
The sum of the measure of the interior angles of a triangle is **180°**.



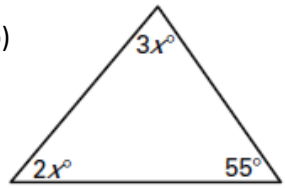
$m\angle A + m\angle B + m\angle C =$ **180°**

Example 2: Find angle measures in triangles.
Find x. Then classify the triangle by its angles.

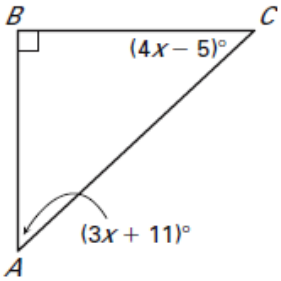
a)



b)



c)



d) In ΔABC, $m\angle B$ is 5 more than the $m\angle A$, and $m\angle C$ is five times $m\angle A$. What is the measure of each angle? Classify the triangle by its angle measures.

Answers: 1. a. Obtuse scalene b. Right isosceles
2. a. x = 30; right b. x = 25; acute c. x = 12; right d. x = 25; 25°, 125°, 30°; obtuse