Concept 9 - Classifying Triangles

Goals: Classify triangles by side and angle
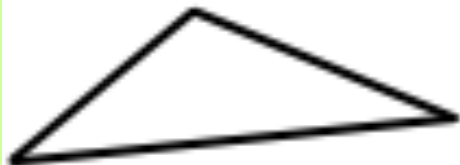
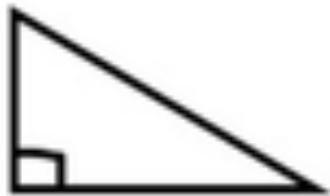Write these definitions in your note-taking guide:

Classifying Triangles by Angle Measure

ACUTE : all three angles are acute
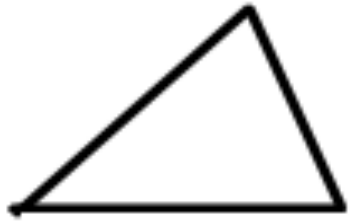
OBTUSE : has one obtuse angle

RIGHT : has one right angle

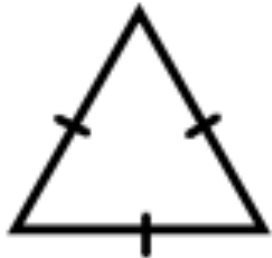**EQUIANGULAR :** all 3 angles are congruent

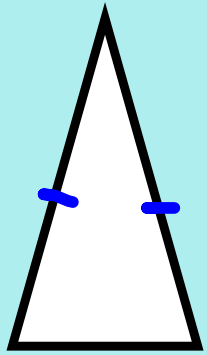# Classifying Triangles by Side Length

SCALENE : no sides are congruent

ISOSCELES : at least 2 sides congruent
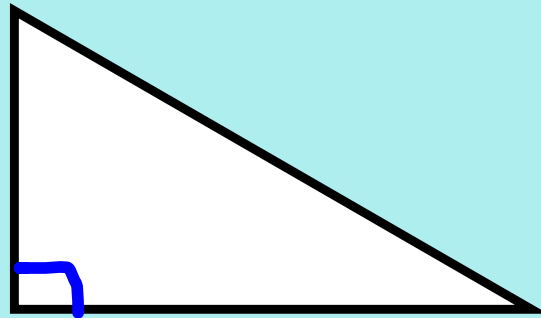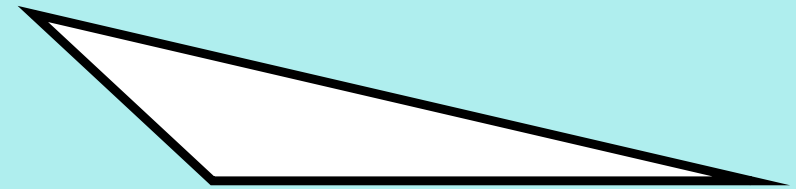
EQUILATERAL : all 3 sides congruent

Every triangle has 2 classifications - 1 to describe the sides and 1 to describe the angles.
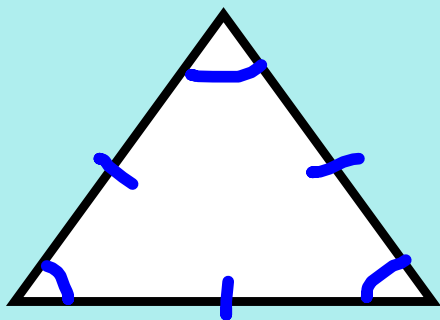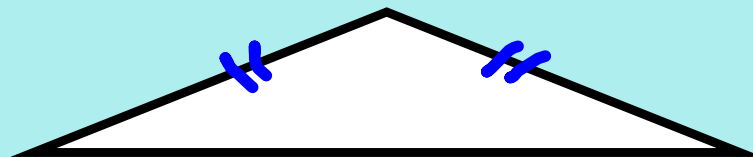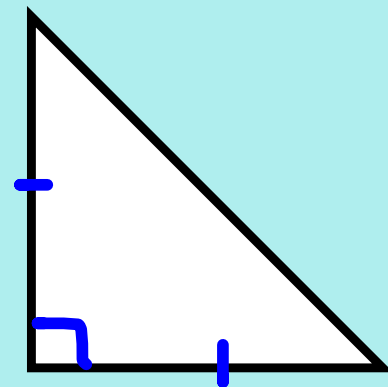
Isosceles
Acute

Scalene
Right

Scalene
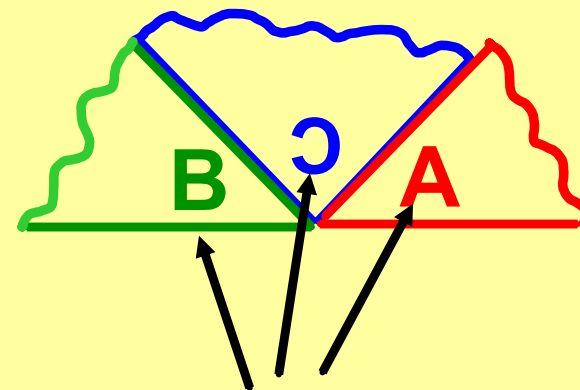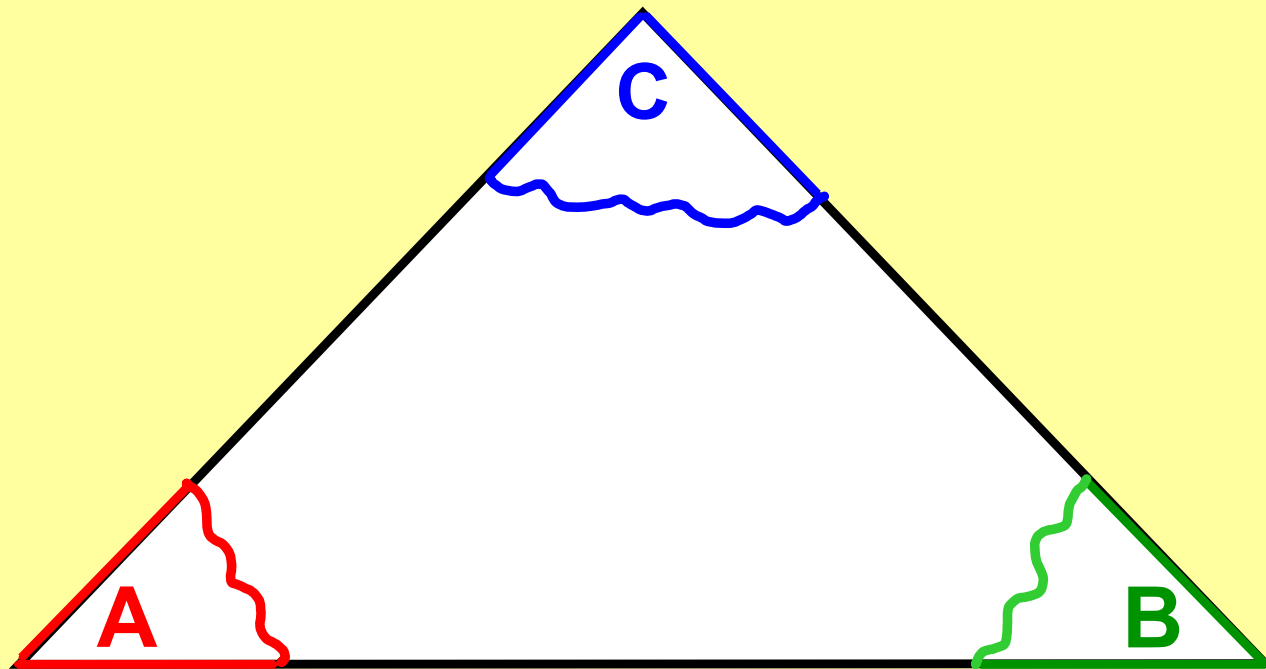Obtuse

Equilateral
Equiangular

Isosceles
Obtuse

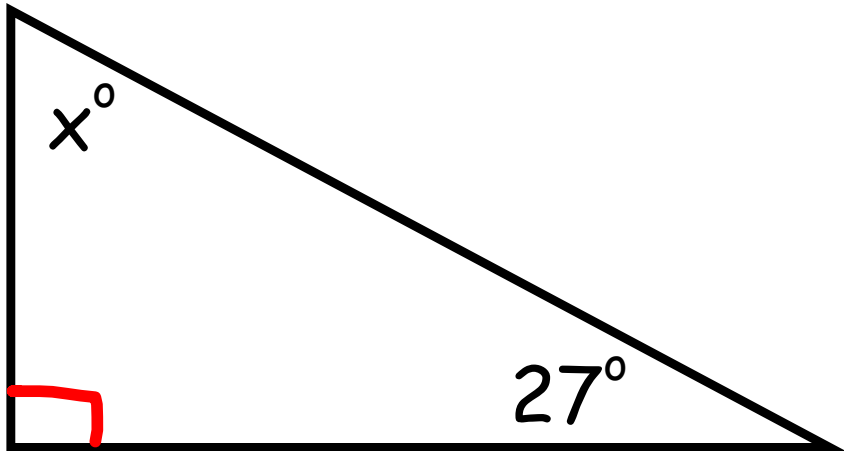Isosceles
Right

Triangle Angle-Sum Theorem

The sum of the measures of the interior angles of a triangle is **180 degrees**.
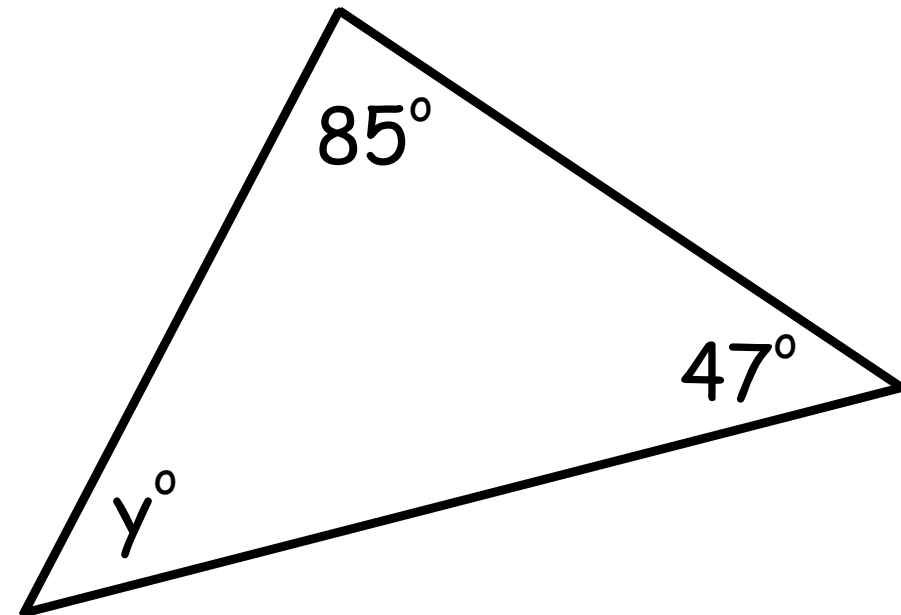

the 3 angles of a triangle always add up to 180 degrees

Find the value of the variable.

Add up the two angles you have already, then subtract from 180.

$x°$

$27°$

$85°$

$47°$

$y°$

90 + 27 = 117
180 - 117 = 63
x = 63 degrees

85 + 47 = 132
180 - 132 = 48
y = 48 degrees

Classify each triangle by its sides (scalene, isosceles, or equilateral) and by its angles (acute, equiangular, obtuse, or right).

1. K, 67°, 90°, 23°, M, L

Scalene

Right

2. N, 30°, 30°, O, 120°, P

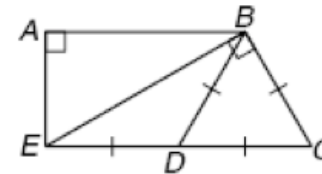**3.** Q, 60°, 60°, 60°, R, S

4. T, 50°, 65°, 65°, U, V

5. W, 45°, 90°, 45°, X, Y

6. B, 60°, 28°, 92°, F, D
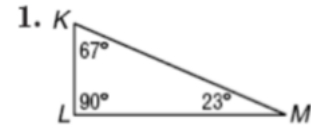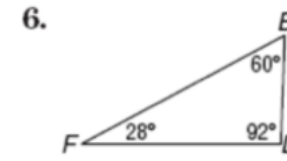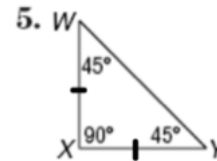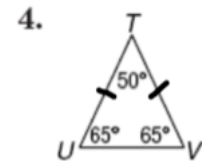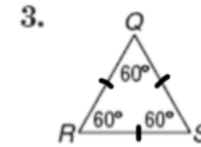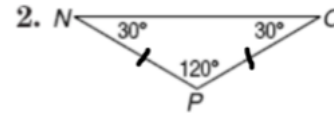
Identify one of each indicated triangle in the diagram to the right.

7. right

8. obtuse

A, B, E, D, C

9. acute

10. equilateral

Find the measure of each numbered angle

11. M, 62°, 1, 90°, P, N

12. S, 1, Q, 30°, R

13. 92°, 1, 63°

14. 20°, 1, 87°