

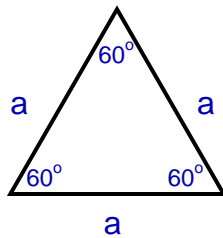
# Triangles

- ➔ A triangle has three sides and three angles.
- ➔ The three angles always add up to 180 degrees.

## Equilateral, Isosceles and Scalene

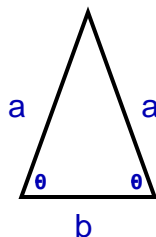
There are three special names given to triangles that tell how many sides and angles are equal.

There can be 3, 2, or NO equal sides and angles:



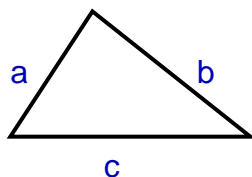
### Equilateral Triangle

Three equal sides.  $a$   
Three equal angles, always  $60^\circ$ .



### Isosceles Triangle

Two equal sides.  $a$   
Two equal angles.  $\theta$



### Scalene Triangle

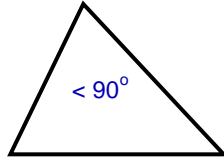
No equal sides.  
No equal angles.



# Triangles

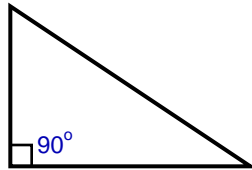
## What Type of Angle ?

Triangles can also have names that tell you what type of angle is inside:



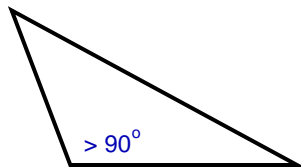
### Acute Triangle

All angles are less than  $90^\circ$ .



### Right Triangle

Has a right angle ( $90^\circ$ )



### Obtuse Triangle

Has an angle greater than  $90^\circ$ .

## Combining the Names.

Sometimes a triangle may have two names, here is a list of possible combinations:

### Right Scalene Triangle

Has a right angle ( $90^\circ$ ), and no equal sides or angles.

### Right Isosceles Triangle

Has a right angle ( $90^\circ$ ) and two equal angles ( $45^\circ$ ), and two equal sides.

### Obtuse Scalene Triangle

Has an angle  $> 90^\circ$ , and no equal sides or angles.

### Obtuse Isosceles Triangle

Has an angle  $> 90^\circ$ , and two equal sides.

### Acute Scalene Triangle

Has all angles  $< 90^\circ$ , and no equal sides or angles.

### Acute Isosceles Triangle

Has all angles  $< 90^\circ$ , and two equal sides.

