# Triangles

Goals: *Classify triangles by angles
*Classify triangles by sides
*Use knowledge of angle sums in triangles to find the measure of missing angles.

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Classify Triangles by Angles:

1) ____Acute_____ triangle: has ____3____ _____acute_____ angles

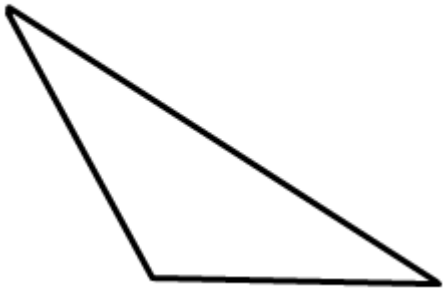
2) _____Right_____ triangle: has __1_____ _____right_____ angle & ___2____ _____acute_____ angles

3) _____Obtuse_____ triangle: has __1_____ ___obtuse_____ angle & ___2____ ___acute_____ angles

**ALL triangles have at least _____ _____ angles!**

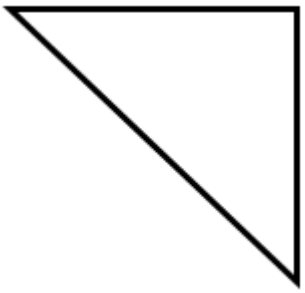
**Classify the following triangles by their angles:**

**Ex:**



Obtuse

**Ex:**



Right

**Ex:**

Acute

Classify Triangles by Sides:

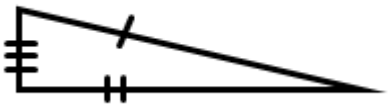
1) __Isosceles_____ triangle: has _2____ _____equal_____ sides

2) __Equilateral_____ triangle: has __3___ _____equal_____ sides

3) ___Scalene_____ triangle: has ___0__ ____equal_____ sides

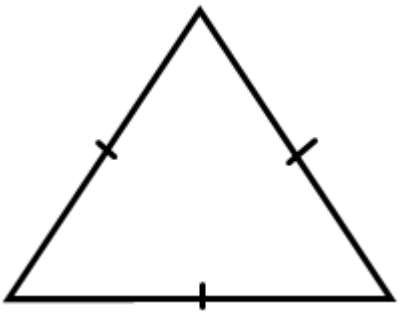
**Classify the following triangles by their sides:**

**Ex:**



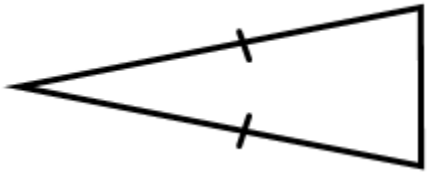
Scalene

**Ex:**



Equilateral

**Ex:**



Isosceles

Triangles: Side - Angle Relationships:

**The number of ___sides_____ equal in any triangle is also the number of

__angles_____ that are equal

**Ex:** An isosceles triangle has _2___ equal sides, so it also has _2____ __equal_____

Angles.

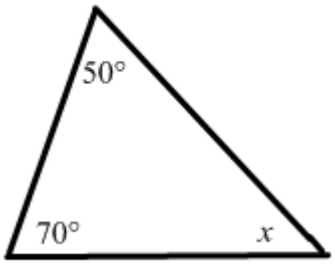
*How many equivalent angles does an equilateral triangle have? Scalene?

3 0

**The _sum_____ of all three angles in any triangle is _180°_____. You can use this fact to find missing angles.

**Find the missing angle or angles:**

**Ex:**

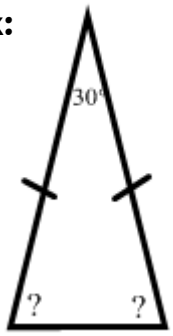



$50 + 70 + x = 180$
$120 + x = 180$
$-120 \quad -120$
$x = 60$

**Ex:**

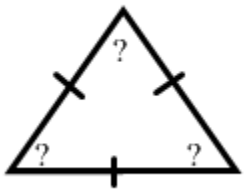

$90 + 50 + x = 180$
$140 + x = 180$
$-140 \quad -140$
$x = 40$

**Ex:**



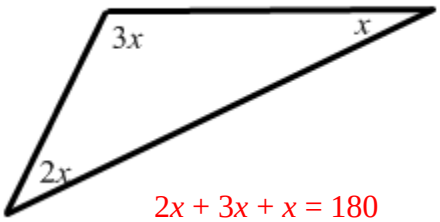

$30 + 2x = 180$
$-30 \quad -30$
$\frac{2x}{2} = \frac{150}{2}$
$x = 75$

**Ex:**




$x + x + x = 180$
$\frac{3x}{3} = \frac{180}{3}$
$x = 60$

**Ex:**




$2x + 3x + x = 180$
$\frac{6x}{6} = \frac{180}{6}$
$x = 30$