Lesson One: Introduction to Triangles

Goals:

- Demonstrate an understanding of the different parts of a triangle.
- Apply the 180° rule to determine the size of an angle in a triangle.

A triangle is a three sided figure. Although it has three sides, it actually contains six parts: three sides and three angles.

For our trigonometry unit, we will be trying to find the length of a missing side (usually called "x") or the size of a missing angle (usually called θ). The symbol θ is a letter of the Greek alphabet and is pronounced "theta".

Before we start to work with the sides and the angles, there is one more fact about triangles that we need to know:

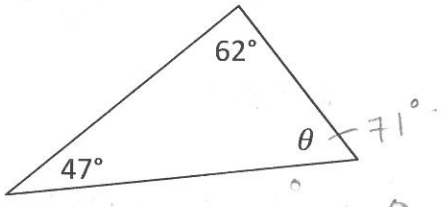
The sum of the three angles in a triangle adds up to 180°.

This means that if we know two of the angles in a triangle, we can easily find the size of the third angle (by subtracting the other two from 180°).

Examples

Determine the size of θ in each of the triangles below. Round your answers to the nearest degree.

Using $\angle A + \angle B + \angle C = 180^\circ$



$\theta = 71^\circ$

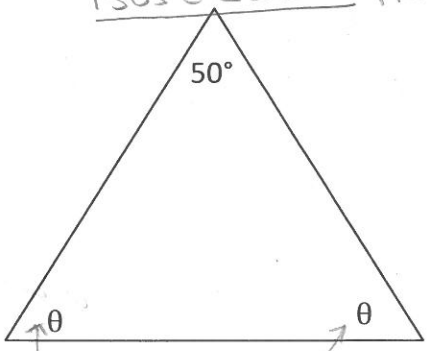
$\theta + 47^\circ + 62^\circ = 180^\circ$

$\theta + 109^\circ = 180^\circ$

$\theta = 180^\circ - 109^\circ$

$\theta = 71^\circ$

This is an example of: ISOSCELES TRIANGLE



These angles are equal.

$\theta + \theta + 50 = 180^\circ$

$2\theta = 180 - 50$

$2\theta = 130$

$\theta = \frac{130}{2}$

$\theta = 65^\circ$