Trig C1 - The Basics

Know what a right triangle is

Know that the sum of the angles in a triangle is 180° and use this to find a missing angle

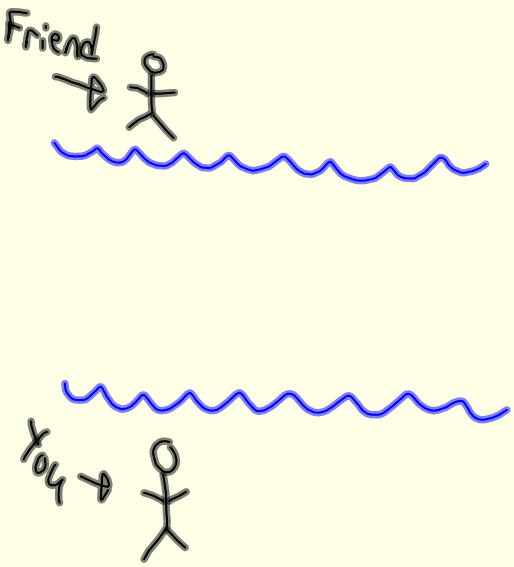
Use the Pythagorean theorem to determine the missing side of a right triangle

Use proper notation for naming angles and sides of a triangle

Introductory Problem

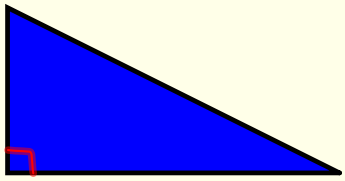
You are responsible for building a bridge across a river. The first thing you need to do is determine the width of the river.

You and a friend are on opposite sides of the river. Describe some strategies that you could use to find the width of the river.



The Language of Trig

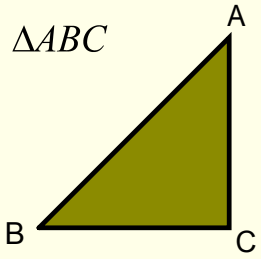
In this chapter we will be working with right triangles.

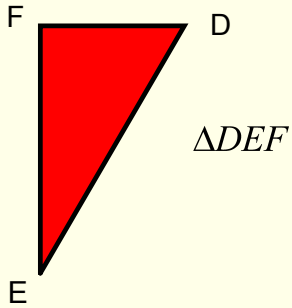


right triangle: a triangle containing a right angle.

90°

We can name triangles using their vertices. Vertices are usually labeled with capital letters.



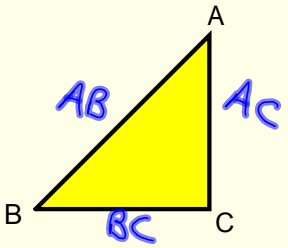


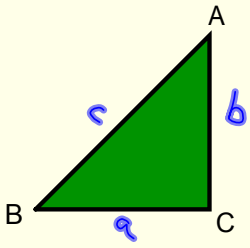
The Language of Trig - Naming Sides

The vertices of a triangle help us to name the sides of a triangle.

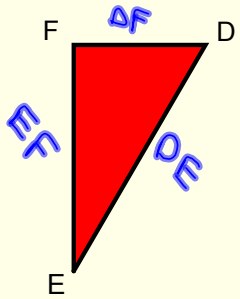
Line Segments

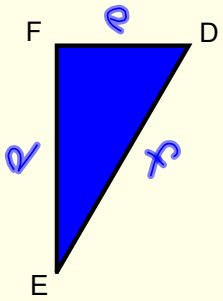
Lowercase Opposites





Your Turn



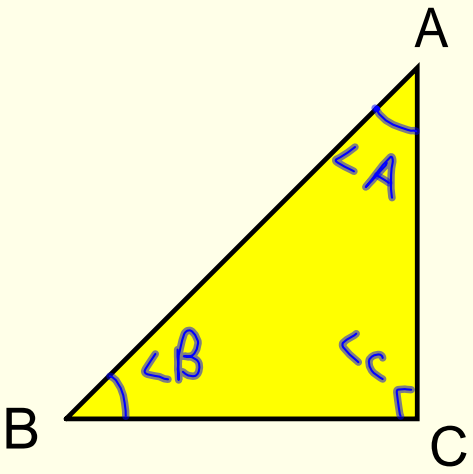


The Language of Trig - Naming Angles

The vertices of a triangle help us to name the angles of a triangle.

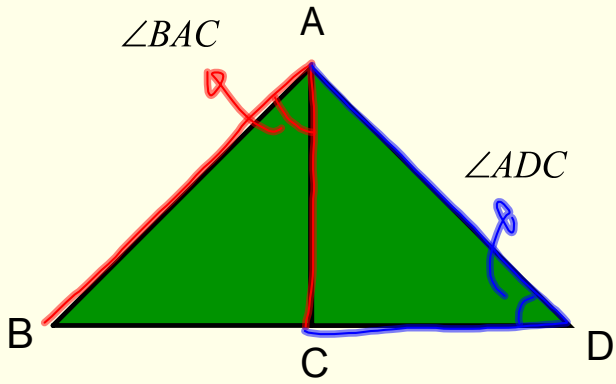
Vertex Angle

The name of the angle is simply the same as the nearest vertex.



Triple Vertex Angle

The angle is formed by the connecting the vertices in the order written.



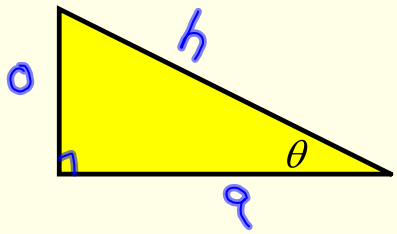
The Language of Trig - Sides Relative to Angles

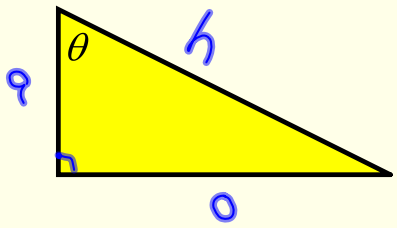
The sides of triangles also have different names relative to angles in the triangle.

hypotenuse(h): the side opposite the right angle. Always the longest side.

opposite(o): the side opposite the chosen acute angle

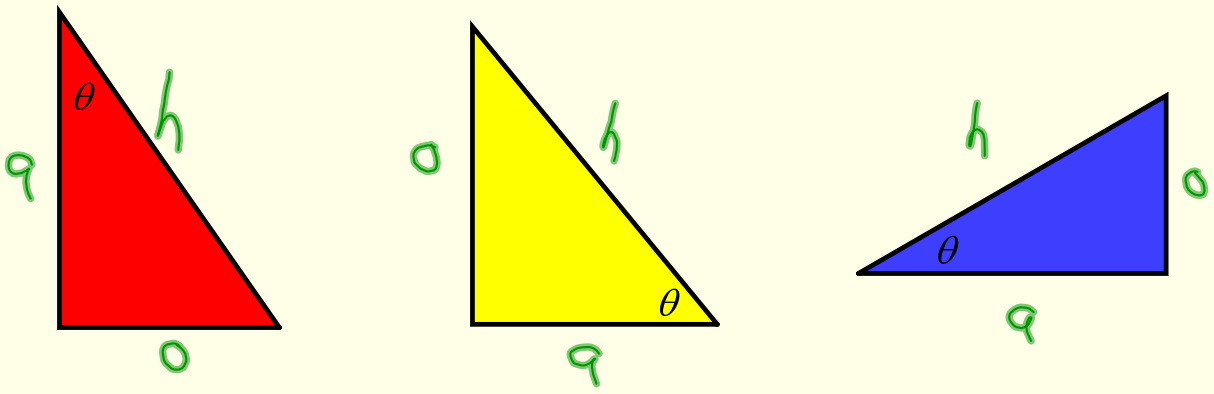
adjacent(a): the side adjacent (beside) the chosen acute angle (but not the hypotenuse)





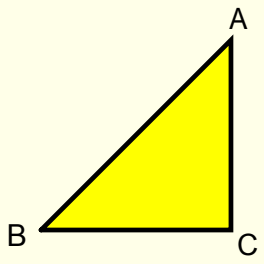
The Language of Trig - Practice

Draw each of the following triangles. Label the sides of the triangles as opposite, adjacent and hypotenuse in relation to the given acute angle.



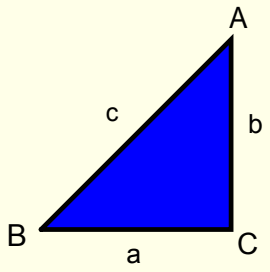
Trig Review

Sum of angles in a triangle is $180°$



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

Pythagorean Theorem



$$a^2 + b^2 = c^2$$

Geometric Proof - Applet

Practice: M10C Trigonometry Review Handout
Trigonometry Ratios Investigation