$$\sin(\theta) = \frac{\text{Opp}}{\text{Hyp}} \qquad \cos(\theta) = \frac{\text{Adj}}{\text{Hyp}} \qquad \tan(\theta) = \frac{\text{Opp}}{\text{Adj}}$$

$$\csc(\theta) = \frac{\text{Hyp}}{\text{Opp}} \qquad \sec(\theta) = \frac{\text{Hyp}}{\text{Adj}} \qquad \cot(\theta) = \frac{\text{Adj}}{\text{Opp}}$$

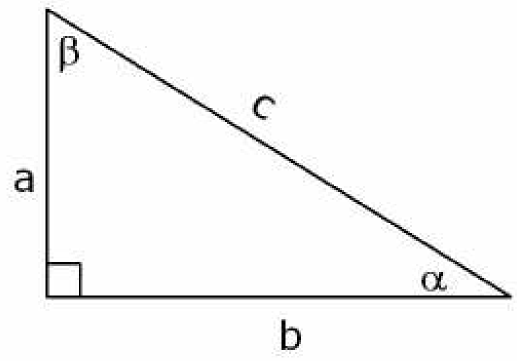

Figure 1

1) If any two of the lengths a, b, or c are known, then the third is easily determined using the Pythagorean Theorem.

2) If all three of the lengths are known, then the angles may be determined using the $\sin^{-1}$, $\cos^{-1}$, or $\tan^{-1}$ keys on your calculator, as detailed here:

$$\alpha = \sin^{-1}\left(\frac{\text{opp}}{\text{hyp}}\right) = \sin^{-1}\left(\frac{a}{c}\right) \text{ and then } \beta = 90 - \alpha$$

Other combinations of the inverse trigonometric functions which can also be used. However, your calculator probably only has inverse function keys for sin, cos, and tan so those are the three to use.

3) If an angle and the length of the hypotenuse are known, then the sine function may be used to find the opposite side. The cosine function may be used to find the adjacent side. Simply plug the know values into the defining equations shown above.

4) If an angle and its opposite side are known, the sine function may be used to determine the hypotenuse. Simply plug the known values into the defining equations above.

5) If an angle and its adjacent side are known, the cosine function may be used to determine hypotenuse. Simply plug the known values into the defining equations above.

6) If only the three angles are known, then there are infinitely many triangles satisfying that condition. Consequently we usually claim that the triangle cannot be solved.