

### **F1: arccos(x) function**

For every trigonometry function, there is an inverse function that works in reverse. These inverse functions have the same name but with 'arc' in front. The arccosine of  $x$  is defined as the inverse cosine function of  $x$ .

The arccos function can be written as:  $y = \arccos(x)$  or  $x = \cos(y)$ .

The domain of the arccosine function :  $-1$  to  $+1$  inclusive

The range of the arccosine function is from  $0$  to  $\pi$  radians inclusive (or from  $0^\circ$  to  $180^\circ$ ).

By convention, the range of arccos is limited to  $0$  to  $+180^\circ$ . So, if we use a calculator to solve say  $\arccos 0.55$ , out of the infinite number of possibilities it would return  $56.63^\circ$ , the one in the range of the function.

Use of the arccos function: Use  $\arccos(x)$  when you know the cosine of an angle and want to know the actual angle.

Characteristics of the arccos function: The range of the arccos function is limited, as it is a inverse trigonometric function, in such a way that the function is one-to-one, that is, there is only one result for each input value.