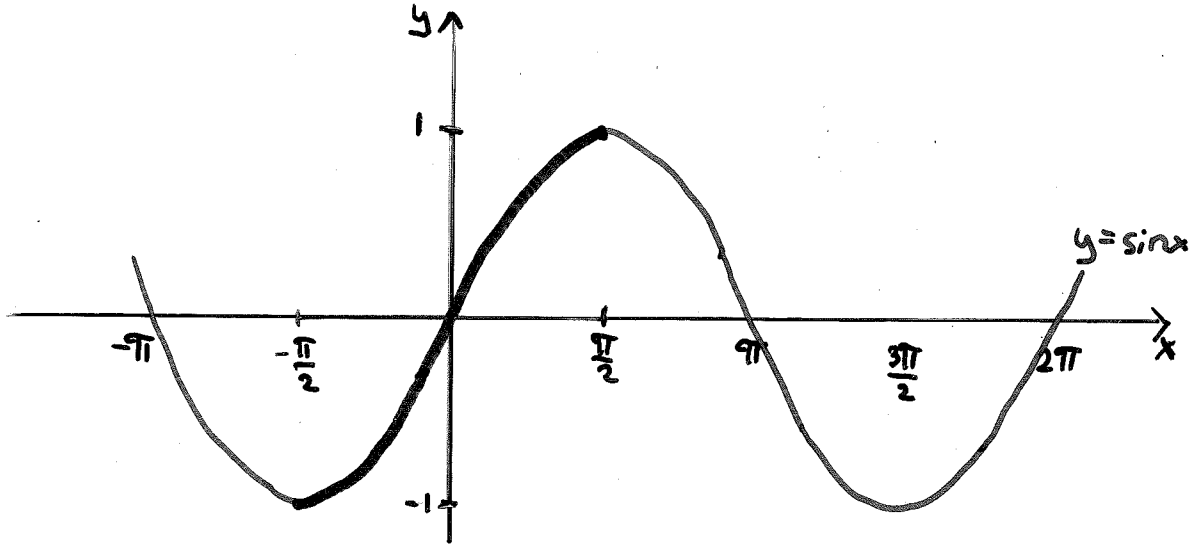
The graph of $\sin : \mathbb{R} \to [-1,1]$ is

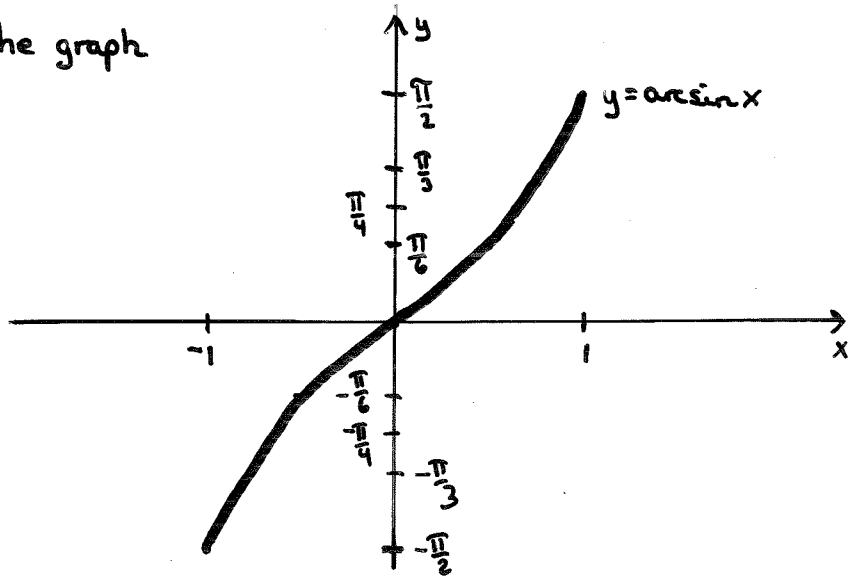


If we restrict the domain, so $\sin : [-\frac{\pi}{2}, \frac{\pi}{2}] \to [-1,1]$, then sin becomes 1-1 and onto, so it is invertible.

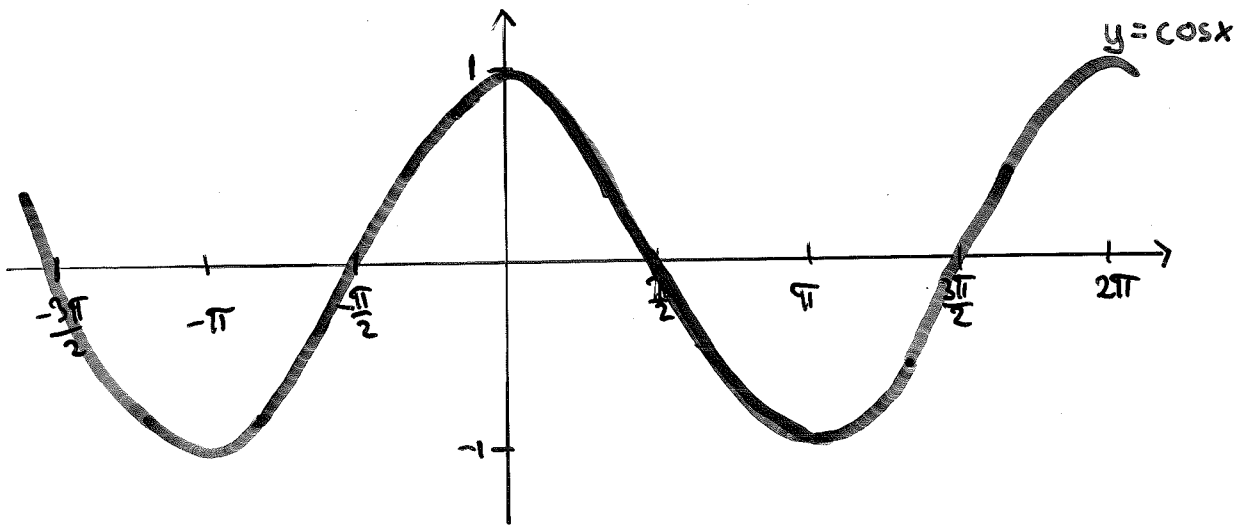
The inverse function $\sin^{-1}$ is usually called arcsin.

$\arcsin : [-1,1] \to [-\frac{\pi}{2}, \frac{\pi}{2}]$

and has the graph



The graph of $\cos: \mathbb{R} \to [-1, 1]$ is



If we restrict the domain, so $\cos: [0, \pi] \to [-1, 1]$, then cos becomes 1-1 and onto, so it is invertible.

The inverse function $\cos^{-1}$ is usually called arccos.

$\arccos: [-1, 1] \to [0, \pi]$

and has the graph