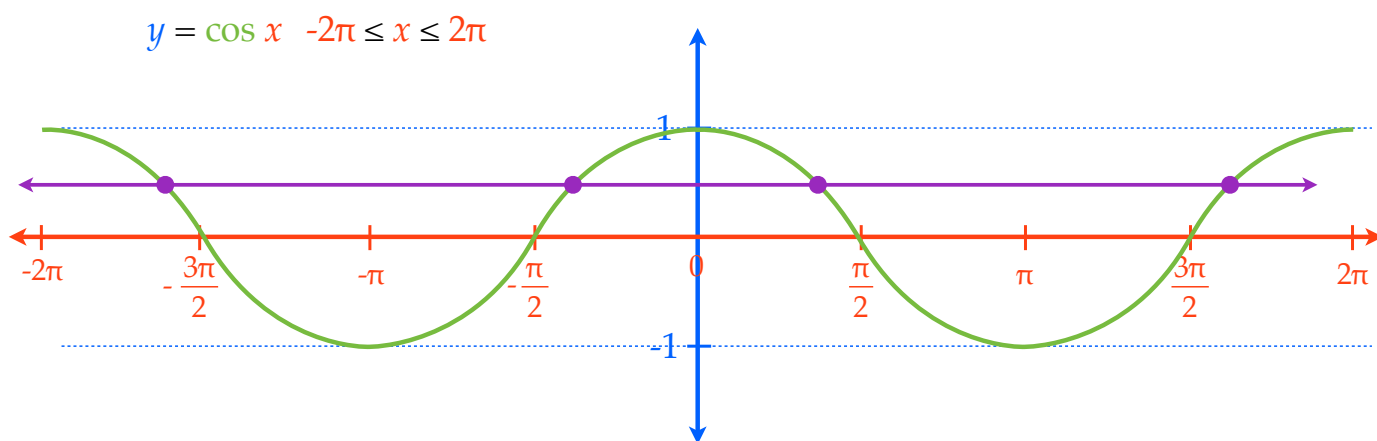
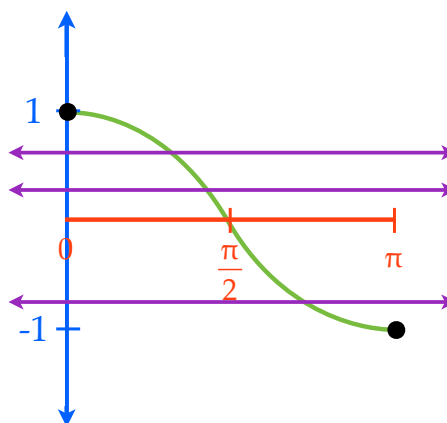
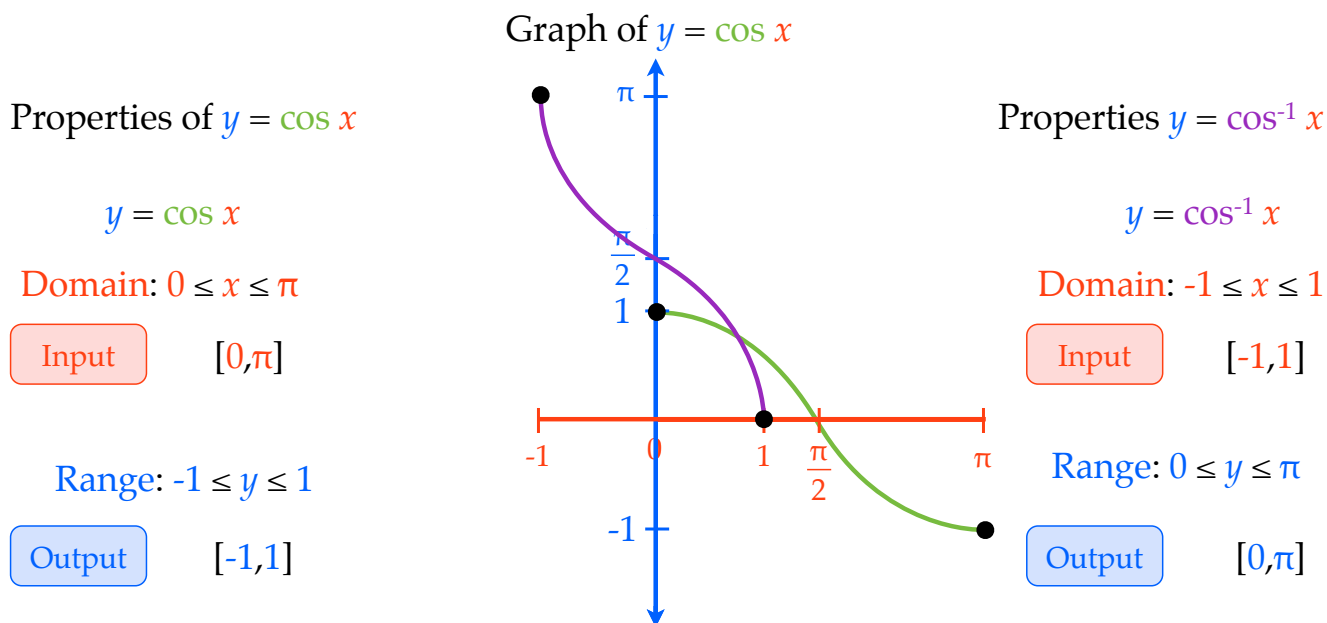


Graph of $y = \cos x$ For a function to have an inverse, it must pass the **horizontal line test**.Graph of $y = \cos x$ For a function to have an inverse, it must pass the **horizontal line test**.Restrict the domain of $y = \cos x$ to $0 \leq x \leq \pi$

$$y = \cos x$$





θ	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	π
$\cos \theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1

Evaluate the following:

$$y = \cos \frac{\pi}{3}$$

$$y = \cos \frac{\pi}{6}$$

$$\theta = \cos^{-1} \frac{1}{2}$$

$$\theta = \cos^{-1} \frac{\sqrt{3}}{2}$$

θ	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	π
$\cos \theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1

Evaluate the following:

$$y = \cos \frac{3\pi}{4}$$

$$y = \cos 0$$

$$\theta = \cos^{-1} -\frac{\sqrt{2}}{2}$$

$$\theta = \cos^{-1} 1$$

θ	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	π
$\cos \theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1

Evaluate the following:

Since the $\cos \frac{\pi}{2}$ is 0

the $\cos^{-1} 0$ is $\frac{\pi}{2}$

Since the $\cos \frac{5\pi}{6}$ is $-\frac{\sqrt{3}}{2}$

the $\cos^{-1} -\frac{\sqrt{3}}{2}$ is $\frac{5\pi}{6}$

Since the $\cos \frac{\pi}{4}$ is $\frac{\sqrt{2}}{2}$

the $\cos^{-1} \frac{\sqrt{2}}{2}$ is $\frac{\pi}{4}$

θ	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	π
$\cos \theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1

Evaluate the following:

$$\cos^{-1} -1$$

$$\cos^{-1} -\frac{1}{2}$$

θ	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	π
$\cos \theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1

$$y = \cos x$$

$$y = \cos^{-1} x$$

Input

Domain: $0 \leq x \leq \pi$

Domain: $-1 \leq x \leq 1$

Input

Output

Range: $-1 \leq y \leq 1$

Range: $0 \leq y \leq \pi$

Output

if $y = \cos x$, then $\cos^{-1} y = x$

s

