TRIGONOMETRIC FUNCTIONS

A DEFINITIONS

A.1 COMPLETING TABLES OF VALUES

Ex 1: For $f(x) = \sin(x)$, complete the table of values for the multiples of $\frac{\pi}{8}$ (rounded to 2 decimal places):

x	0	$\frac{\pi}{8}$	$\frac{\pi}{4}$	$\frac{3\pi}{8}$	$\frac{\pi}{2}$
$\sin(x)$					

Ex 2: Complete the table of values for the multiples of $\frac{\pi}{6}$ (rounded to 2 decimal places):

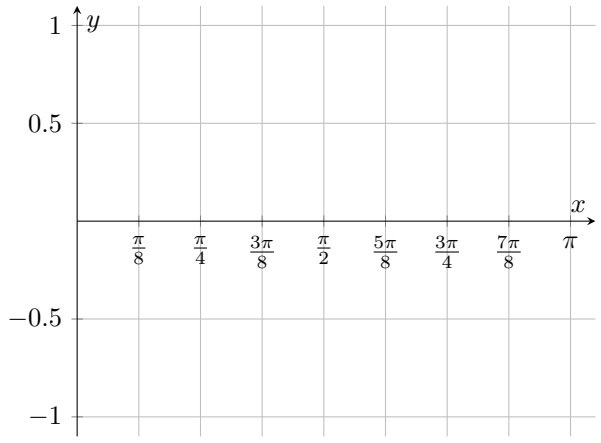
x	0	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{5\pi}{6}$
$\cos(x)$						

A.2 PLOTTING GRAPH

Ex 3: Here is a table of values for the function $f(x) = \sin(x)$:

x	0	$\frac{\pi}{8}$	$\frac{\pi}{4}$	$\frac{3\pi}{8}$	$\frac{\pi}{2}$	$\frac{5\pi}{8}$	$\frac{3\pi}{4}$	$\frac{7\pi}{8}$	π
$\sin(x)$	0	0.38	0.71	0.92	1.00	0.92	0.71	0.38	0

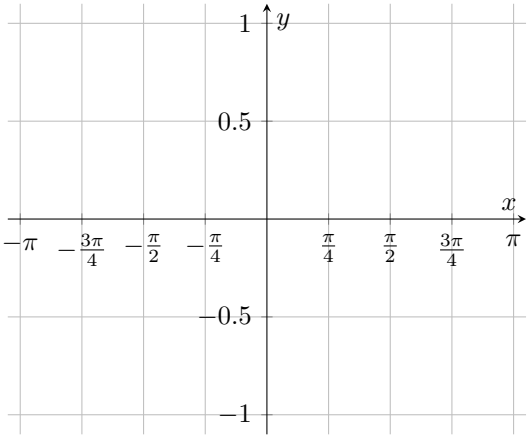
Plot the graph of the function.



Ex 4: Here is a table of values for the function $f(x) = \sin(x)$:

x	$-\pi$	$-\frac{3\pi}{4}$	$-\frac{\pi}{2}$	$-\frac{\pi}{4}$	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3\pi}{4}$
$\sin(x)$	0	−0.71	−1.00	−0.71	0	0.71	1	0.71

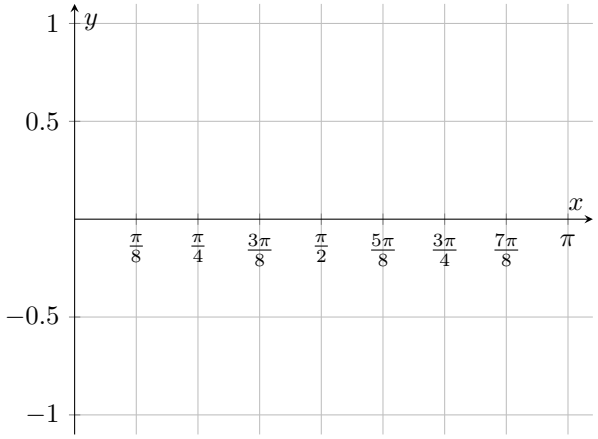
Plot the graph of the function on the interval $[-\pi\,;\,\pi]$:



Ex 5: Here is a table of values for the function $f(x) = \cos(x)$:

x	0	$\frac{\pi}{8}$	$\frac{\pi}{4}$	$\frac{3\pi}{8}$	$\frac{\pi}{2}$	$\frac{5\pi}{8}$	$\frac{3\pi}{4}$	$\frac{7\pi}{8}$
$\cos(x)$	1	0.92	0.71	0.38	0	−0.38	−0.71	−0.92

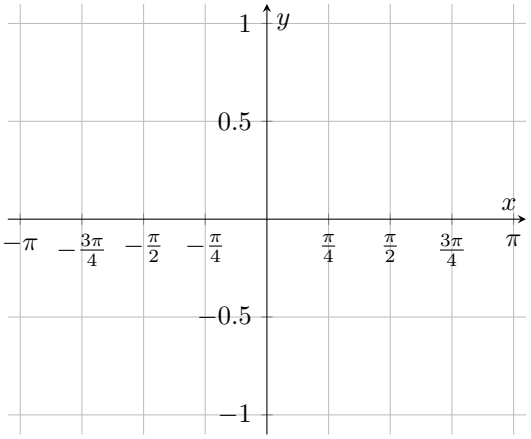
Plot the graph of the function.



Ex 6: Here is a table of values for the function $f(x) = \cos(x)$:

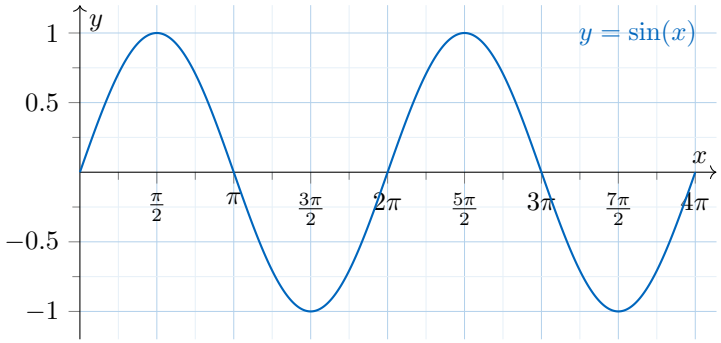
x	$-\pi$	$-\frac{3\pi}{4}$	$-\frac{\pi}{2}$	$-\frac{\pi}{4}$	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3\pi}{4}$
$\cos(x)$	−1	−0.71	0	0.71	1	0.71	0	−0.71

Plot the graph of the function on the interval $[-\pi\,;\,\pi]$:



A.3 READING GRAPH

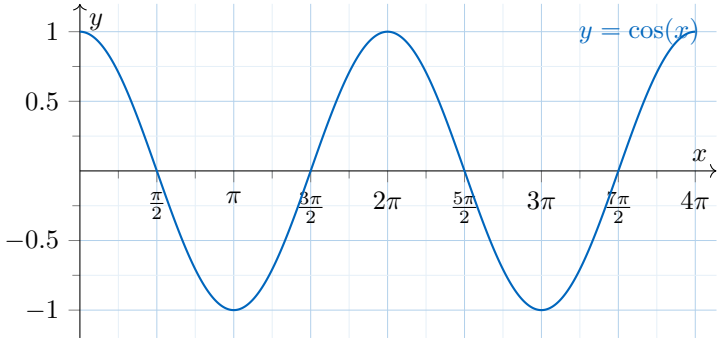
Ex 7: Below is the graph of the function $y = \sin(x)$, for $0 \leq x \leq 4\pi$.



1. Find the y-**intercept** of the graph.

2. Use the graph to determine the values of x in the interval $0 \leq x \leq 4\pi$ such that $\sin(x) = 1$:

Ex 8: Below is the graph of the function $y = \cos(x)$, for $0 \leq x \leq 4\pi$.



1. Find the y-**intercept** of the graph.

2. Use the graph to determine the values of x in the interval $0 \leq x \leq 4\pi$ such that $\cos(x) = 0$: