Graphing $f(x) = \sin x$ and $f(x) = \cos x$

Complete the following table of values for $f(x) = \sin x$ and $f(x) = \cos x$ then plot each on the grid below.

x	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	360°
$f(x) = \sin x$	O	0.5	0.87	1	0.87	0.5	O	-0.5	-0.87	-1	-0.87	-0.5	O
$f(x) = \cos x$	1	0.87	0.5	O	-0.5	-0.87	-1	-0.87	-0.5	O	0.5	0.87	1

For the sine function:	For the cosine function:
What is the period of the graph? 360°	What is the period of the graph? 360
What is the amplitude of the graph? $\frac{max-min}{2}$ 1	What is the amplitude of the graph? 1
What are the x - intercepts? 0, 180, 360	What are the x - intercepts? 90, 270
What is the y - intercept? (0,0)	What is the y - intercept? (0,1)
What is the axis of the curve? $\frac{max+min}{2}$ $y=0$	What is the axis of the curve? $y=0$ b/c $\frac{1+(-1)}{2}=0$
What are the max and min values? max=1 min=-1	What are the max and min values? max 1 min = -1
What is the domain? What is the range? D: {x∈R} R: {y∈R	-1 ≤ f(x) ≤ 1}	What is the domain? What is the range? D: {x∈R} R: {y∈R	-1 ≤ f(x) ≤ 1}
When is the graph increasing? 0 < x < 90° 270° < x < 360	When is the graph increasing? 180 < x < 360
When is the graph decreasing? 90 < x < 270	When is the graph decreasing? 0 < x < 180
Explain why this graph is a function Passes the VLT, and there's one y value for every x	Explain why this graph is a function y values will repeat if we extend past 360°

THINKING: Compare the graphs of $y = \sin x$ and $y = \cos x$. How are they the same? How are they different?

Similarities
- periodic
- Same period
- same equation of the axis y=0
- same amplitude

∴ The sine & cosine function are congruent Sinusoidal curves; the cosine curve is is the sine curve translated 90° to the left.
$\cos x = \sin(x+90)$