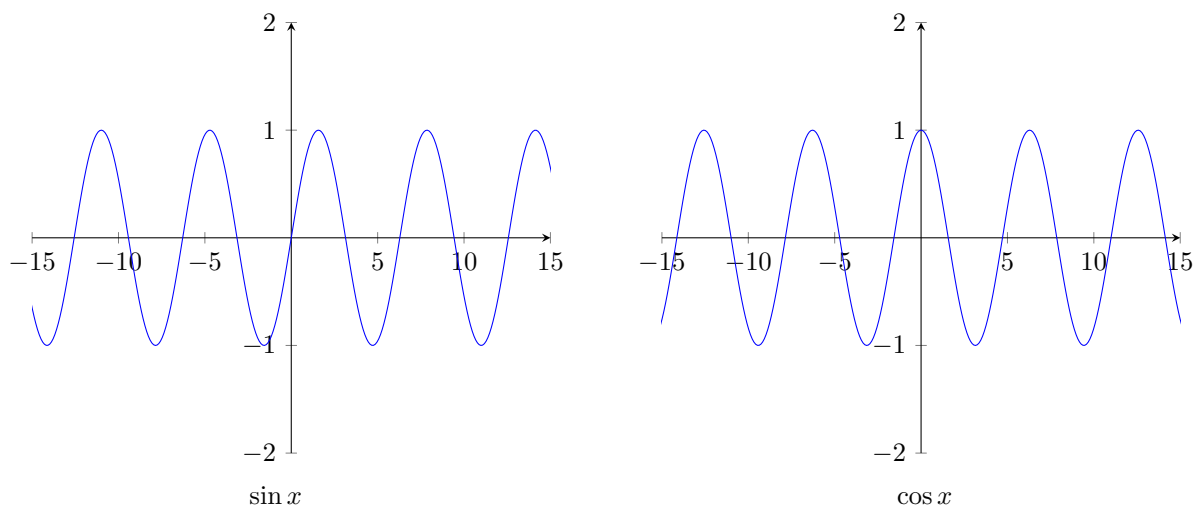


Graphs of sine and cosine, notational notes

Every angle has a sine and a cosine, so we can think of sine and cosine as functions, $\sin x$ and $\cos x$. Their graphs, shown below, are very useful to know.



From the graphs, we can see that both functions are *periodic*; that is, they endlessly repeat themselves. Notice that the shape of the cosine graph is the same as the shape of the sine graph. Cosine is just the sine function shifted left by $\pi/2$ units in the x direction.

Notational notes

People sometimes leave off the parentheses. For example, $\sin(x)$ and $\sin x$ both mean the same thing.

A shorthand people often find confusing is $\sin^2(x)$. This is shorthand for $(\sin x)^2$, squaring the sine function. This same notation is often used for other powers, like $\cos^3 x$ for $(\cos x)^3$.

Also note that the variable name inside is sometimes x , sometimes θ , and sometimes other things. Most of the time, the variable name chosen is not important. The sine function is the same sine function whether the variable name is x , θ , or whatever.