Let’s start with a brief review of trigonometric functions.

First, starting with the very basics, we should all know SOHCAHTOA.

\[
\begin{align*}
\sin x &= \frac{\text{opposite}}{\text{hypotenuse}} \\
\cos x &= \frac{\text{adjacent}}{\text{hypotenuse}} \\
\tan x &= \frac{\text{opposite}}{\text{adjacent}} \\
\csc x &= \frac{1}{\sin x} \\
\sec x &= \frac{1}{\cos x} \\
\cot x &= \frac{1}{\tan x}
\end{align*}
\]

We should also know what the graphs of the trigonometric functions look like.

Graph of \( y = \sin x \)

Graph of \( y = \cos x \)

Graph of \( y = \tan x \)
Now let’s take a look at how to evaluate a trigonometric function. In Calculus, we always use radians instead of degrees.

Consider the unit circle (i.e. a circle with a radius of 1, centered at the origin).

We know the circumference of the circle is $2\pi$. So, 1/4th of the circle will have length of $\pi/2$. From here, we can determine where $\pi/6$, $\pi/4$, and $\pi/3$ are. These numbers represent the distance from 0 in the counterclockwise direction.

We will use this unit circle to help us evaluate trigonometric functions. Note that:

$$\sin x = y \text{ - coordinate} \quad \cos x = x \text{ - coordinate} \quad \tan x = \frac{\sin x}{\cos x}$$

You should know the whole first quadrant, and any multiple of $\frac{\pi}{2}$.
Fill out the chart below. In each box, you are to evaluate the function corresponding to its row with the $\theta$ corresponding to its column. For example, the top left blank box, you should evaluate $\sin 0$.

Try this on your own first and then check with the answers below.

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<th></th>
<th>0</th>
<th>$\frac{\pi}{6}$</th>
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<th>$\frac{\pi}{3}$</th>
<th>$\frac{\pi}{2}$</th>
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<td>$-1$</td>
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</tbody>
</table>

**Answers:**