# Thoughtful Thinking #2 - Trig Functions

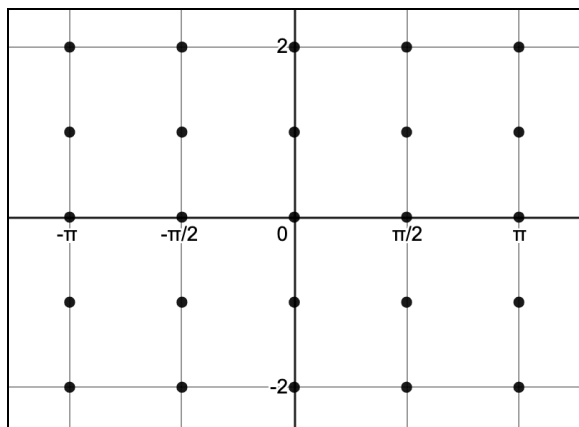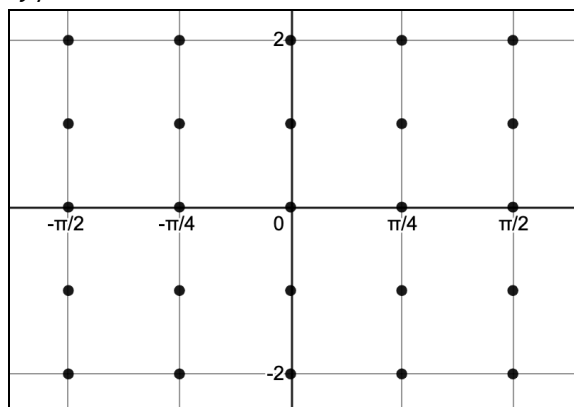| | |
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| You recently learned that you can, relatively easily, take the derivative of something like this…<br><br>$$y = 8\cos x$$<br><br>And get this...<br><br>$dy/dx =$ _____ | 1.) If you think of $dy/dx$ as a function, what are the inputs? What are the outputs? |
| 2.) Consider the slope equation $dy/dx = 2\cos x$. Let's graph this below. Only plot on the points with dots.<br><br> | 3.) Try to find the function whose derivative is $dy/dx = 2\cos x$. |
| 4.) Let's try graphing another slope equation. Try $dy/dx = \sin x \cos x$<br><br> | 5.) Try to find the function whose derivative is $dy/dx = \sin x \cos x$. |

6.) Why is the slope field useful when it comes to answering #5?

If we wanted the function that went through the point $(0, 1)$ and had the derivative $dy/dx = \sin x \cos x$, how could we get a better idea of what that curve looks like?

Sketch your solution on the slope field above.