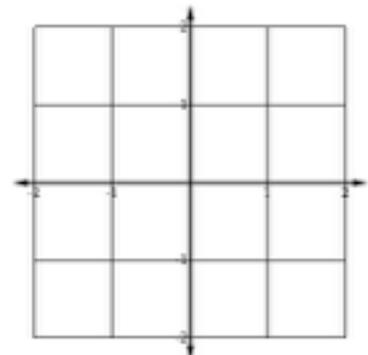


You need access to desmos.com either on your phone or on a computer.

1. Enter $y = \sin x$ in the first entry.
 - a. What is the domain?
 - b. What is the range?
2. Recall how you find the inverse of a function (hint: switch the x and y letters). Write the inverse of $y = \sin x$.
3. Enter $\sin y = x$ in the second entry.
 - a. What have you learned in your past to use to determine if this graph is a function?
 - b. Is it a function?
4. Behind your second equation entry, add this: $\{-\pi/2 \leq y \leq \pi/2\}$ Be sure to use the $\{\}$ and do NOT put any punctuation after $\sin y = x$. Look at the graph.
 - a. What is the domain?
 - b. What is the range?
 - c. How does the domain compare to the range in #1?
 - d. Is the graph a function?
 - e. What did you do to $\sin y = x$ to make it a function?
 - f. Find the values of the endpoints of the graph by either touching the endpoint on your screen, or by placing your cursor on the endpoint and pressing your spacebar, or whatever it takes to see the ordered pair of the endpoints!
5. Enter $y = \sin^{-1} x$ in the third desmos entry.
6. Enter $y = \arcsin x$ in the fourth desmos entry.
7. What do you notice about the graphs of last three desmos entries?
8. What could you conclude about the equations $y = \sin^{-1} x$ and $y = \arcsin x$ and the equation $\sin y = x \{-\pi/2 \leq y \leq \pi/2\}$?
9. Graph inverse sine ($y = \arcsin x$). Complete the table using desmos to find the points (write the y-values in terms of π --this requires some serious thought). State the domain and range. What is the y-intercept? Is the function even, odd, or neither? Why?

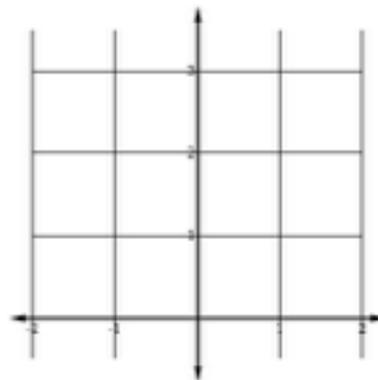
x	y
-1	
0	
1	



10. Using the knowledge gained in #1 - 10, write the inverse function for $y = \cos x$ and its domain and range. (You will have to tweak #4 to make the inverse function work for cosine. To be correct the inverse function of cosine, your graph must exist equally over the y-axis.) Write two other equations that would produce the same graph. Check your answer by graphing all three equations in desmos.

11. Graph inverse cosine. Complete the table using desmos to find the points (write the y-values in terms of π --this requires some serious thought). State the domain and range. What is the y-intercept? Is the function even, odd, or neither? Why?

x	y
-1	
0	
1	



Note: Your TI calculator does not use the arcsin notation. It uses the $\sin^{-1} x$ notation for inverse. For your calculator to graph $y = \sin^{-1} x$ correctly, it will need to be in RADIAN mode.

YOU WILL NEED TO KNOW YOUR UNIT CIRCLE FOR THIS CONCEPT!
PLEASE REVIEW IT.