FINDING SOLUTIONS TO STUFF
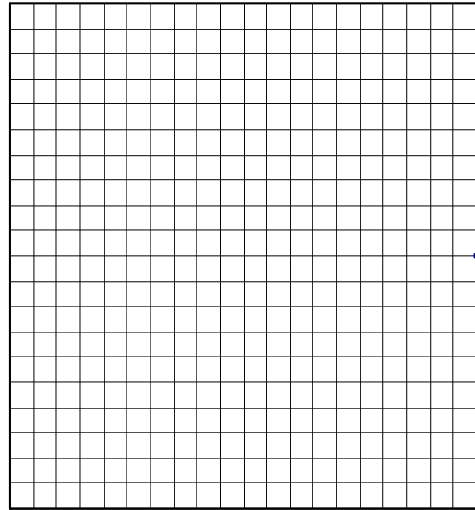
1. Graph the function y = sin (x) (where x is in radians, of course).

2. Find all the solutions to ¾ = sin (x) by the following steps:
   (a) Draw the line y = ¾ on the graph. Get a good guess where the solutions should be.
   (b) Find the principal solution of the equation ¾ = sin (x) using the sin^{-1} function on your calculator

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   (c) Find the symmetry solution to the principal solution. (It might help to sketch sine.)

   (d) Find all the solutions to ¾ = sin (x). Use the $2\pi n$ notation we talked about in class.
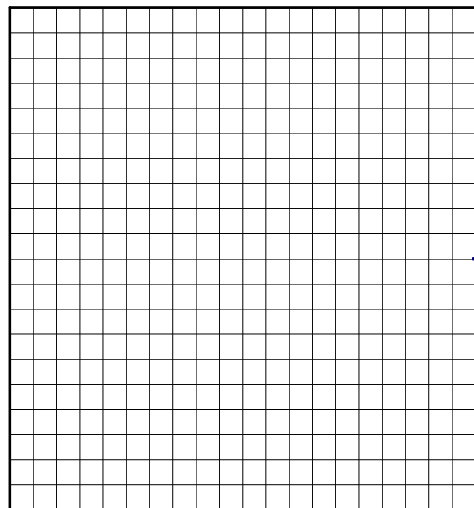
3. Graph the function $y = 3\cos(2(x-1))$.

4. Find all the solutions to $2 = 3\cos(2(x-1))$ by the following steps:
   (a) Draw the line y=2 on the graph. Get a good guess where the solutions should be.
   (b) Forget x for now. Find the principal solution of the equation $2 = 3\cos(\theta)$ using the cos^{-1} function on your calculator.

   (c) Find the symmetry solution to the principal solution. (It might help to sketch cosine.)

(d) Find all the solutions to $2 = 3\cos(\theta)$. Use the $2\pi n$ notation we talked about in class.

(e) Plug in 2x-1 for θ in the forms you found in (d). Solve for x.

5. Following the steps above find all solutions to the equation $-13 = 5\tan(\pi(x+1)^3)$. You don't have to graph the function. The graph is here to help you if you want. Remember that tangent is π-periodic, not 2π.