MAC 1105 MATH GYM FALL 2017 Week 7
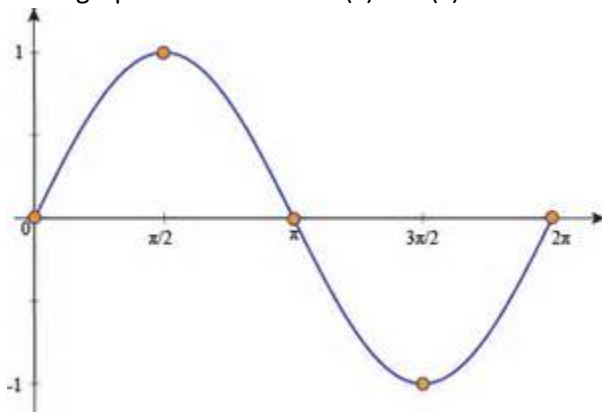

Goals for week 7

Check if you understand:

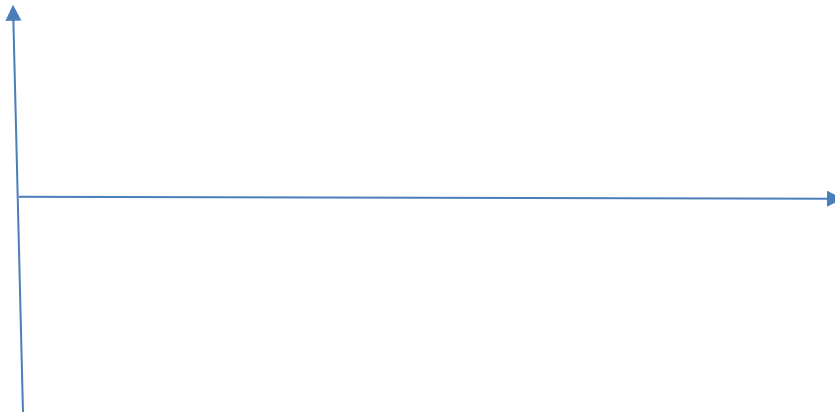☐ What it means to transform a graph

Check if you are able to:

☐ Transform points of a graph
☐ Transform entire graphs

---

1. If the graph of the function f(x)= sin(x) looks like

   Use the coordinate system below to graph g(x) = sin (x+ π/2).

One of your classmates is confused and says "but I have never seen sin(x) before" …you say "it does not matter; you already know how to do this because we just…" Complete this statement to help your classmate understand why they already know how to get the graph of sin $(x+ \pi/2)$ using transformations. _____

_____

_____

_____

_____

_____

_____
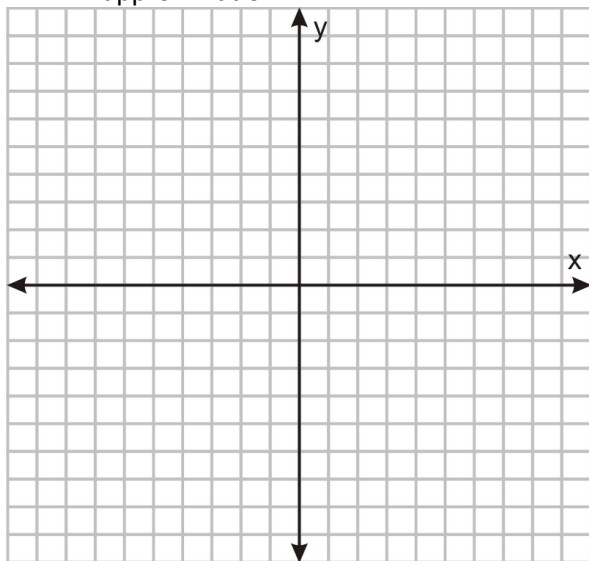
2. Draw a parabola with at least 3 transformations from the parent function. Write the function for your parabola. Note that your parabola should contain distinct points rather than be a sketch or approximation.

Your function:

How do you know that your function matches your graph?

_____

_____

_____

_____

3. These exercises will prepare you for the written portion of Test 2. You will get your best results if you study your transformations first and then try to do these transformations and piecewise questions. Ask your Professor or LAs for help if you get stuck!

a) Use transformations to graph $f(x)$ starting with the basic function. Plot 3 points and use them to perform transformations. Show **one transformation at a time** in a correct order (clearly labeled). Write the type of transformation and the equation of each graph as you go.
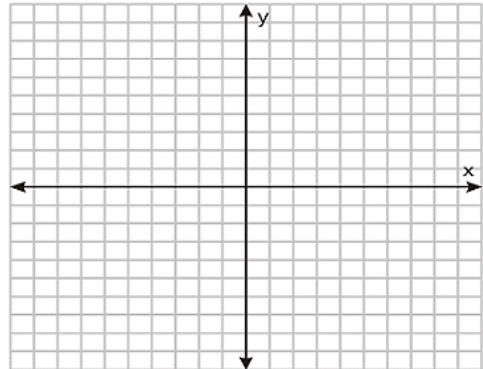
$$f(x) = -2|x - 4| - 3$$

Parent function: f(x)=
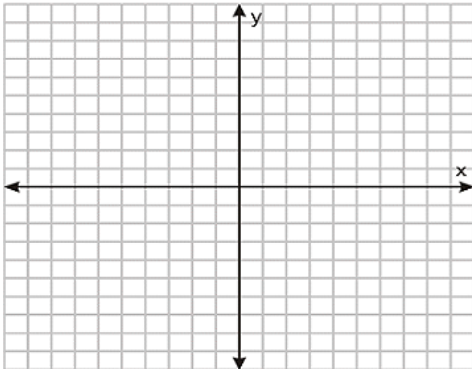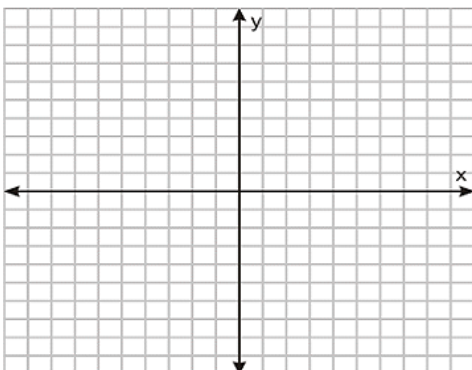

Frist Transformation: f(x)=
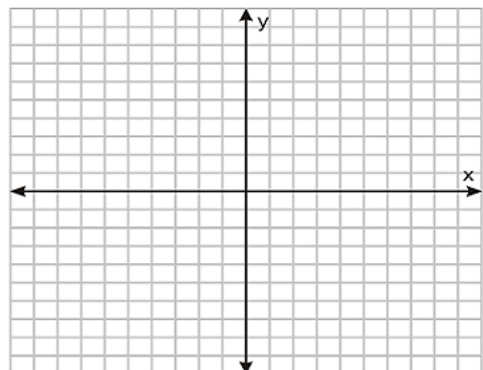

Second Transformation: f(x)=
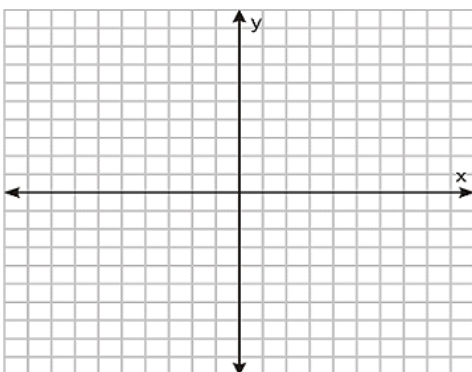

Third Transformation: f(x)=

Fourth Transformation: f(x)=

b) Given the following $f(x) = \begin{cases} -|x| & when\ x < -3 \\ 4 & when\ -3 \le x \le 2 \\ (x-2)^2 + 4 & when\ 2 < x \end{cases}$

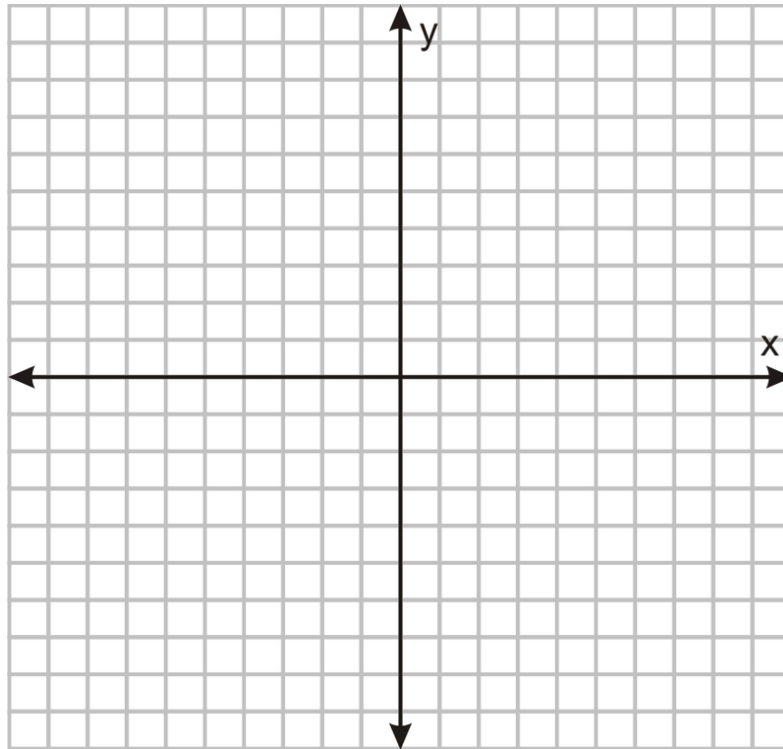Is $f(x)$ a function? Explain how you know.
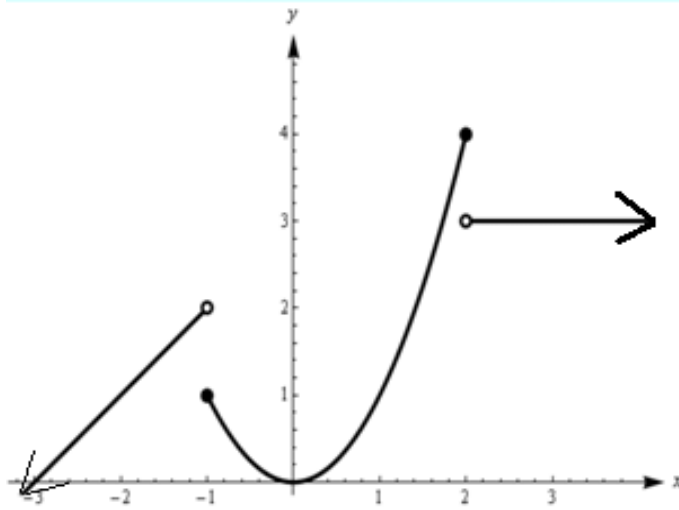
_____

_____

For $f(x)$:

What are the intercepts?

What is the domain?

What is the range?

Graph $f(x)$:

c) Write the function notation for the function defined by the graph:

How do you know that the function that you wrote for the above graph is correct?

_____
_____
_____