Handout for MATH 1300 (Barsamian) Lecture L12 Mon Sep 14
Part 1: Library of Basic Functions, continued

For each function

- Fill in the table of y values. (No calculators! Work in fractions, not decimals.)
- Make a graph.
  - Make your graph large and neat.
  - Label the graph with the formula of the function
  - Use the data from your table to label points on the graph with their (x, y) coordinates.

x	$y = \sqrt[3]{x}$
-8	
-1	
0	
1	
8	

x	$y = \frac{1}{x}$
-2	
-1	
$-1/2$	
0	
$1/2$	
1	
2	

x	$y = \frac{1}{x^2}$
-2	
-1	
$-1/2$	
0	
$1/2$	
1	
2	

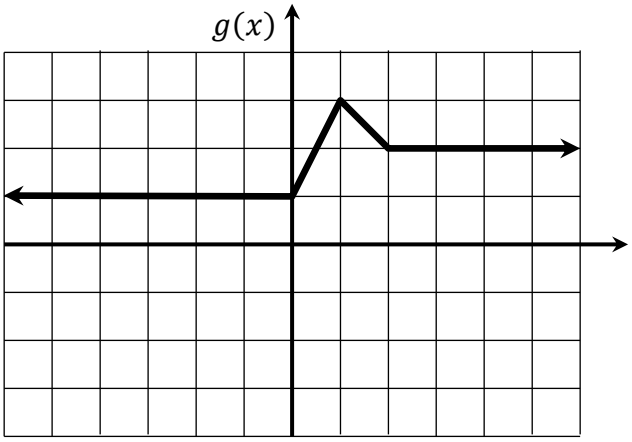
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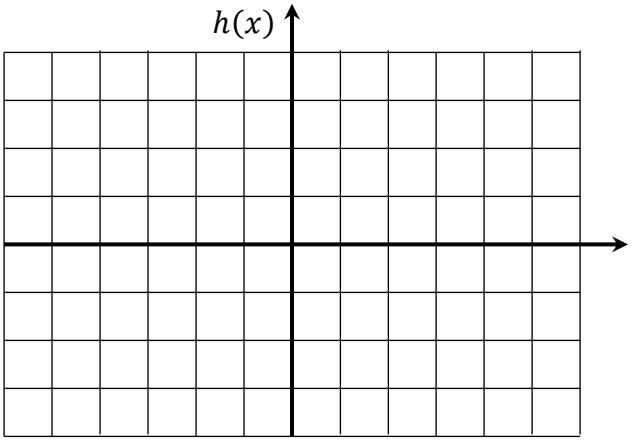
Part 2: Transformations of Graphs

[1] Make a graph of $y = 2 \cdot \sqrt[3]{-x} - 3$ by making transformations of a basic graph. Show the sequence of all the graphs.

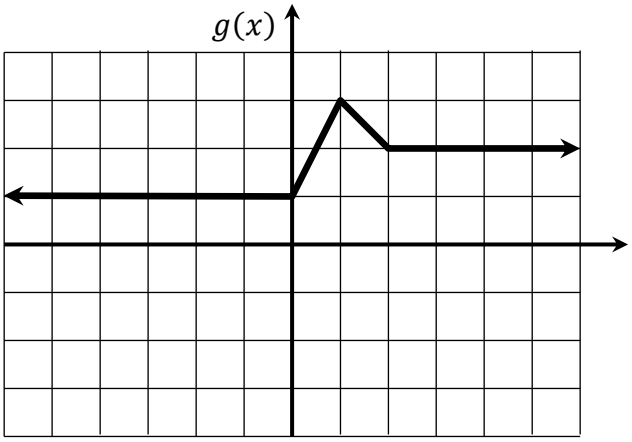
[2] Make a graph of $y = \frac{3}{x+1} + 2$ by making transformations of a basic graph. Show the sequence of all the graphs.

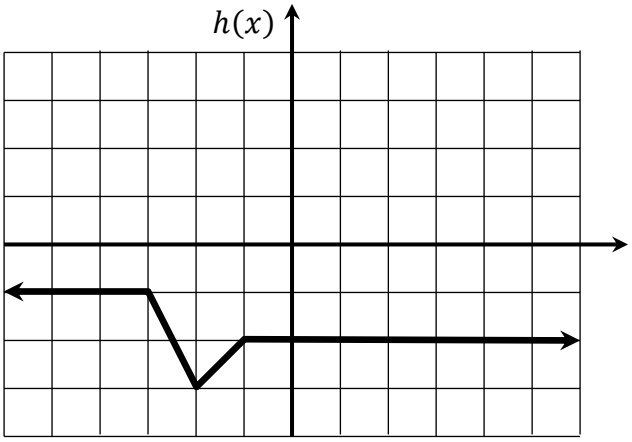
[3] The graph of a function $g(x)$ is given.
Function $h(x)$ is defined by the equation $h(x) = g\left(-\frac{x}{2}\right) - 3$. Sketch the graph of $h(x)$.





[4] The graph of functions $g(x)$ and $h(x)$ are shown.
Give a formula expressing $h(x)$ in terms of $g(x)$.





[5] Suppose that the graph of $g(x)$ is magnified vertically by a factor of 2, and then moved 3 units to the right, and then moved up 5 units. Give a formula for $h(x)$ in terms of $g(x)$.

[6](a) Suppose that the graph of $y = \frac{1}{x}$ is magnified vertically by a factor of 2 and then moved up 5. Give a formula for the new graph.
(b) Instead, suppose that $y = \frac{1}{x}$ is first moved up 5 units, and then the resulting graph is magnified vertically by a factor of 2. Give a formula for the new graph.