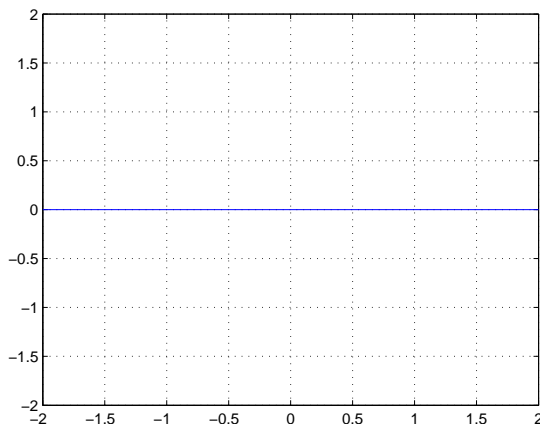


Lab Time:

Your Name:

GOAL: This quiz is designed to illuminate your understanding of functions, both visually and conceptually as well as transformations of functions due to linear compositions.

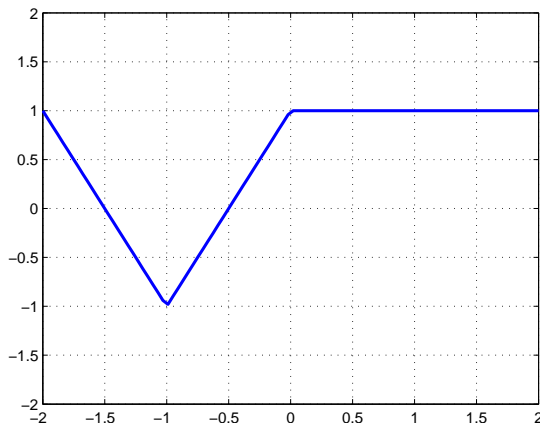


1. (10 points TOTAL.) On the axes above, please sketch the graph of the following function

$$h(s) = \begin{cases} |s + 1|, & \text{if } -2 \leq s < 0 \\ |s - 1|, & \text{if } 0 \leq s \leq 2 \end{cases}$$

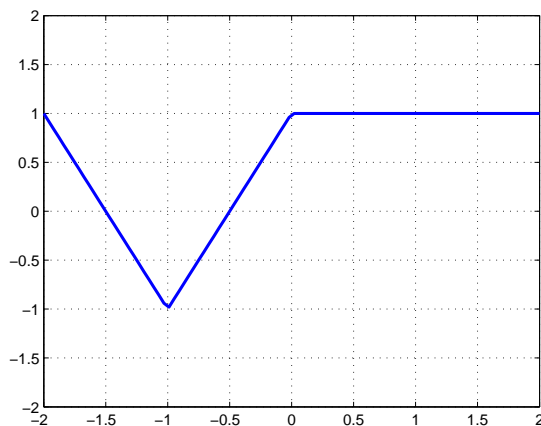
Is $h(s)$ an even function, an odd function or neither? EXPLAIN YOUR ANSWER USING AT LEAST TWO COMPLETE SENTENCES.

2. (10 points TOTAL). Consider the graph of the following unknown function $f(x)$ which you are told is defined for all real numbers, i.e. a domain of $(-\infty, \infty)$.

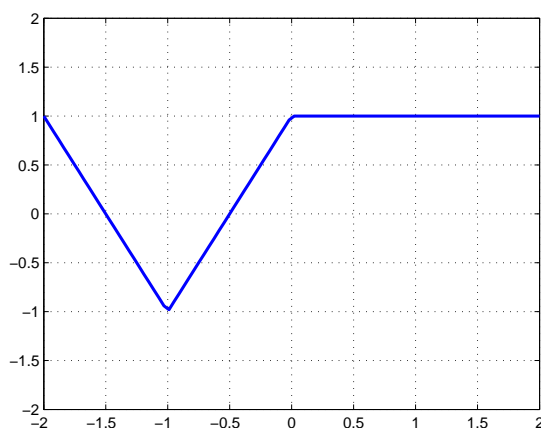


2 (a) (3 points.) In the space below, please write down a piecewise-defined function $f(x)$ for which the graph above is a visual representation.

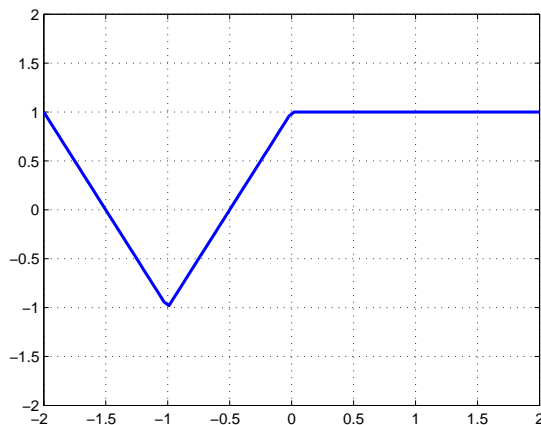
2 (b) (2 points.) On the figure below, carefully draw in the graph of the function $f(-x)$. CLEARLY INDICATE ON THE FIGURE WHICH GRAPH IS $f(-x)$.



2 (c) (2 points.) On the figure below, carefully draw in the graph of the function $f(x - 2)$. CLEARLY INDICATE ON THE FIGURE WHICH GRAPH IS $f(x - 2)$.



2 (d) (3 points.) On the figure below, carefully draw in the graph of the function $-f(x) + 1$. CLEARLY INDICATE ON THE FIGURE WHICH GRAPH IS $-f(x) + 1$.



BONUS ((5 points.) For parts (b), (c) and (d) explain what kind of transformation the graph of $f(x)$ is undergoing (i.e. reflection, shift or stretch) AND write the transformed function (the one you sketched) as a COMPOSITION of two functions, $f(x)$ and a to-be-determined function $g(x)$ in each case.