

Free Response Practice #8
Calculator Permitted

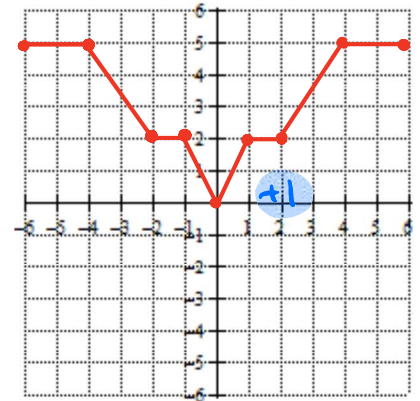
In the table below are values of a function $f(x)$ on the interval $[0, 6]$. The graph of $f(x)$ consists of line segments connecting the points in the table below. Use the data in the table to answer the questions that follow.

x	0	1	2	4	6
$f(x)$	0	2	2	5	5

a. Suppose $f(-x) = f(x)$. Sketch the graph of $f(x)$ on the interval $[-6, 6]$. Explain your reasoning.

+1 Since $f(-x) = f(x)$, then $f(x)$ is EVEN which means the graph of $f(x)$ is symmetric to y-axis.

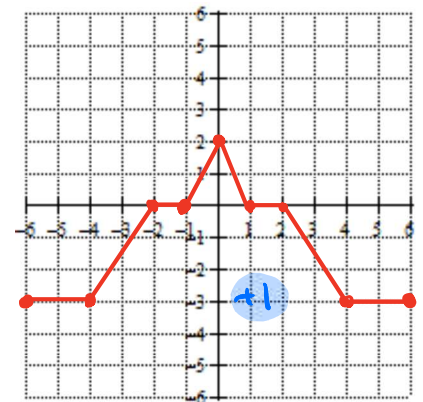
+1 Because $f(x)$ is even for every point (x, y) there is also $(-x, y)$.



b. Sketch a graph of $y = -f(x) + 2$ on the interval $[-6, 6]$. Explain how you got the new coordinates that make up the graph of $y = -f(x) + 2$, which has the same characteristics as the function in part a.

+1 The $-f(x)$ causes the graph to reflect over the x-axis and the $+2$ translates the graph of $f(x)$ up 2.

+1 If $y = -f(x) + 2$, then every point (x, y) gets transformed to $(x, -y + 2)$.



c. Suppose $f(-x) = -f(x)$. Sketch the graph of $f(x)$ on the interval $[-6, 6]$. Explain your reasoning.

+1 Since $f(-x) = -f(x)$, then $f(x)$ is ODD which means the graph of $f(x)$ is symmetric to origin.

+1 Because $f(x)$ is ODD for every point (x, y) there is also $(-x, -y)$.

