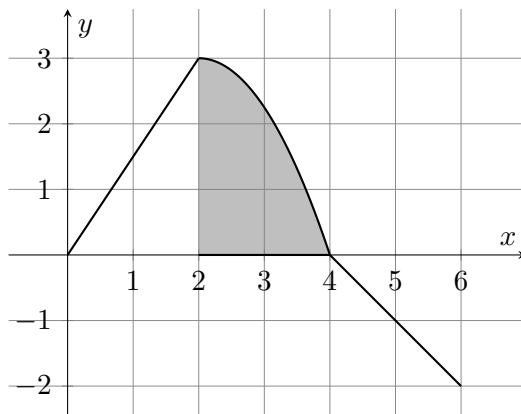**2.** [14 points] A function $g(x)$, which is defined for all real numbers, is graphed on the interval $[0,6]$ below. Note that $g(x)$ is linear on the intervals $(0,2)$ and $(4,6)$, and that the shaded region has area 4. Additionally, $g(x)$ is an **odd function**.

a. [4 points] The function $g(x)$ has a continuous antiderivative, $G(x)$, which satisfies $G(2) = 1$. Complete the following table of values for $G(x)$.

x	-2	0	2	4	6
$G(x)$			1		

b. [10 points] Sketch a graph of $G(x)$ on the interval $[-2,6]$ using the axes provided. Make sure to clearly label the scale on the y-axis and also make it clear where $G(x)$ is increasing or decreasing, and where $G(x)$ is concave up, concave down, or linear.