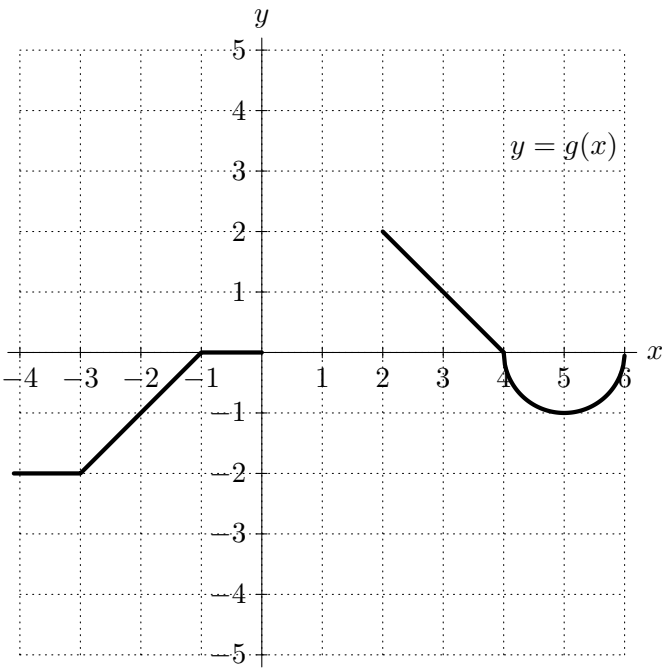
9. [10 points] Suppose $g(x)$ is a function and $G(x)$ is an antiderivative of $g(x)$ such that $G(x)$ is defined and continuous on the entire interval $-4 \leq x \leq 6$. Portions of the graphs of g and G are shown below. Note the following:

- $g(x)$ is zero for $-1 \leq x \leq 0$.
- For $4 \leq x \leq 6$, the graph of $g(x)$ is the lower half of the circle of radius 1 centered at $(5, 0)$.
- For $0 \leq x \leq 1$, the graph of $G(x)$ is the top right quarter of the circle of radius 1 centered at the origin.

a. [4 points] Use the portions of both graphs shown on the right to complete the table below with the exact values of $G(x)$.

x	-3	-1	4	6
$G(x)$				



b. [6 points] Use the axes on the right to sketch the missing portions of the graphs of g and G over the interval $-4 \leq x \leq 6$.
Be sure that you pay close attention to each of the following:

- the values of $G(x)$ you found in part (a) above
- where G is/is not differentiable
- where G and g are increasing, decreasing, or constant
- the concavity of the graph of $y = G(x)$