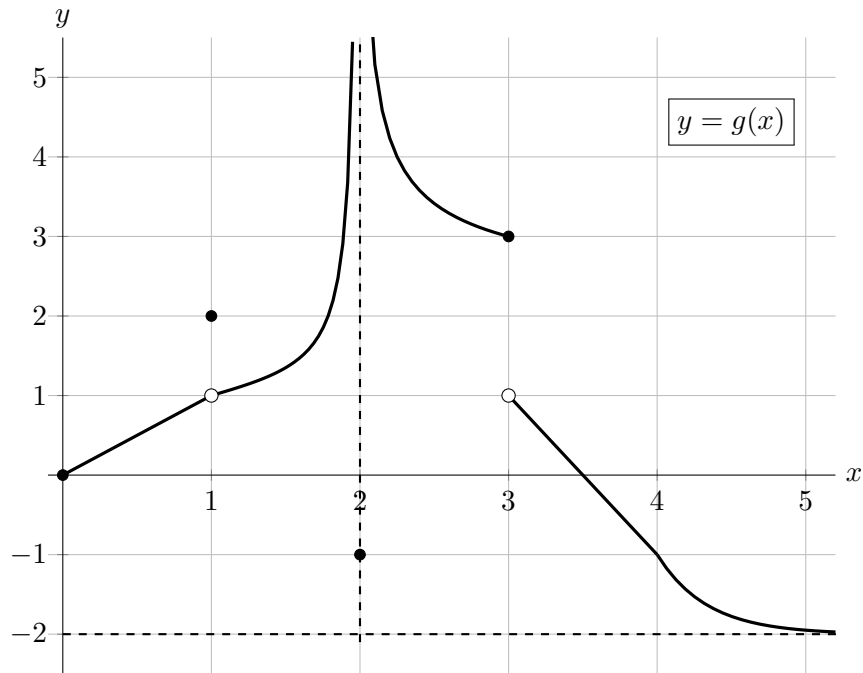


1. [9 points] Below is a portion of the graph of an odd function $g(x)$, which has domain $(-\infty, \infty)$ even though the graph below only shows part of the function with $x \geq 0$. Note that $g(x)$ is linear on the intervals $(0, 1)$ and $(3, 4)$, has a sharp corner at $x = 4$, has a vertical asymptote at $x = 2$, a horizontal asymptote at $y = -2$, and is decreasing for $x > 4$.



- a. [1 point] At which of the following values of x is $g(x)$ continuous? *Circle all correct answers.*

$x = 1$ $x = 2$ $x = 3$ $x = 4$ NONE OF THESE

- b. [8 points] Find the **exact** numerical value of each expression below, if possible. For any values that do not exist, including if they are limits that diverge to $\pm\infty$, write DNE. If there is not enough information to find a given value or determine whether it exists, write NEI. *You do not need to show work. As a reminder, $g(x)$ is an odd function.*

$g(g(3) - 1) =$ _____

$\lim_{x \rightarrow 3^+} g(x) =$ _____

$\lim_{x \rightarrow 4} g(x) =$ _____

$\lim_{x \rightarrow -3^+} g(x) =$ _____

$\lim_{x \rightarrow 2} g(x) =$ _____

$\lim_{h \rightarrow 0} \frac{g(3.5 + h) - g(3.5)}{h} =$ _____

$\lim_{x \rightarrow 3^-} g(x) =$ _____

$\lim_{x \rightarrow \infty} g(x) =$ _____