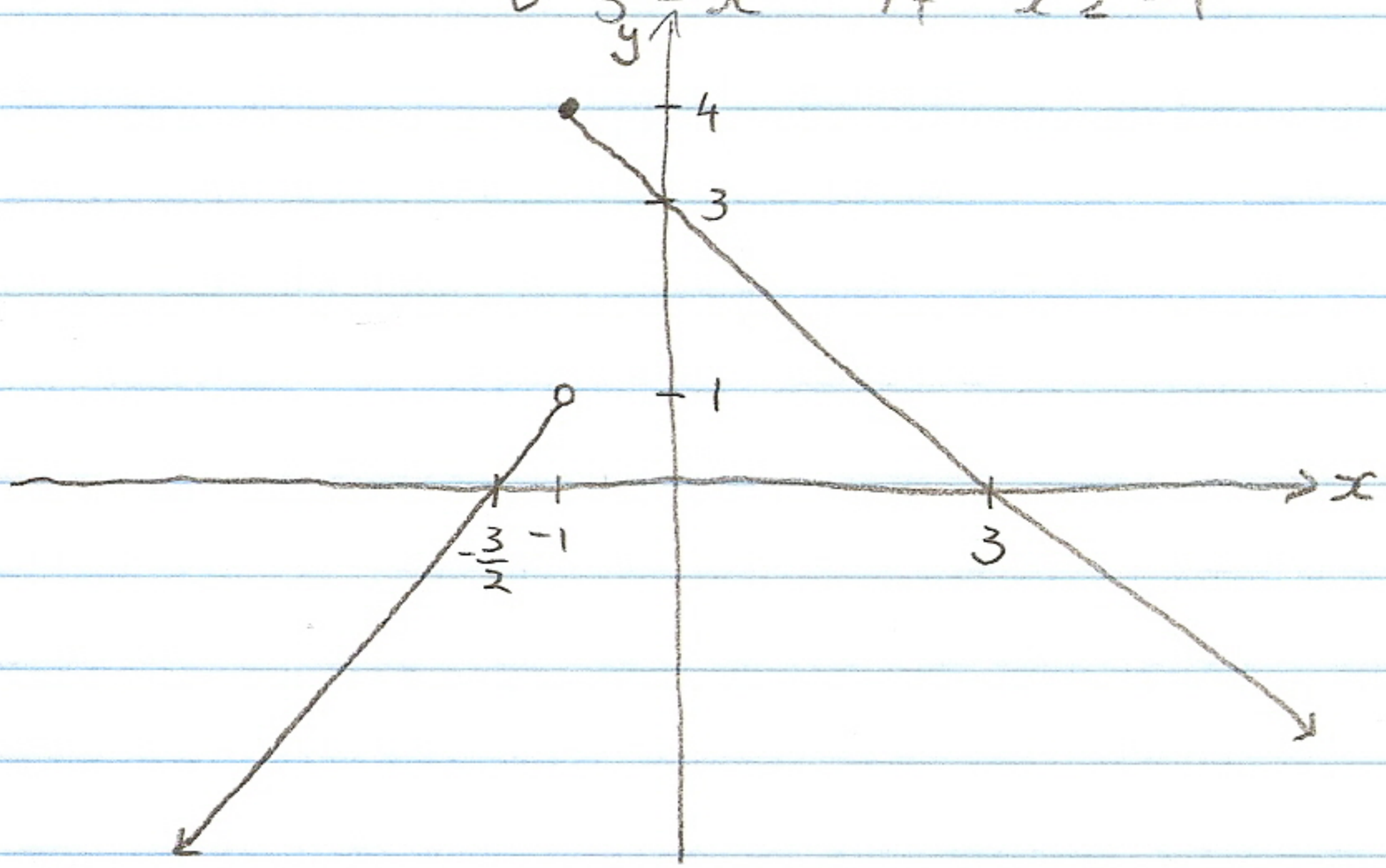
Quiz 6 Solutions

1. Graph the following piecewise defined function:

$$f(x) = \begin{cases} 2x+3 & \text{if } x < -1 \\ 3-x & \text{if } x \geq -1 \end{cases}$$



2. Find the domain of the following function. Give your answer in interval notation.

$$g(x) = \frac{\sqrt{x+2}}{3-x}$$

If $x < -2$, then $\sqrt{x+2}$ is not a real number. Hence, $x \geq -2$. Moreover, $x = 3$ renders the function undefined — for there is a zero in the denominator — thus $x \neq 3$. We conclude that $\text{Dom}(f) = [-2, 3) \cup (3, \infty)$.