MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 1.2 **Math 1000 Worksheet** FALL 2025

For practice only. Not to be submitted.

1. Use the graph of $y = f(x)$ given in Figure 1 to determine each of the following. If the value of the function is undefined or the limit does not exist, indicate this (but label these limits as ∞ or $-\infty$ where appropriate).

(a) $f(0)$ (b) $\lim_{x\to 0^-} f(x)$ (c) $\lim_{x\to 0^+} f(x)$

(d) $\lim_{x\to 0} f(x)$ (e) $f(3)$ (f) $\lim_{x\to 3^-} f(x)$

(g) $\lim_{x\to 3^+} f(x)$ (h) $\lim_{x\to 3} f(x)$ (i) $f(4)$

(j) $\lim_{x\to 4} f(x)$ (k) $f(-2)$ (ℓ) $\lim_{x\to -2^-} f(x)$

(m) $\lim_{x\to -2^+} f(x)$ (n) $\lim_{x\to -2} f(x)$

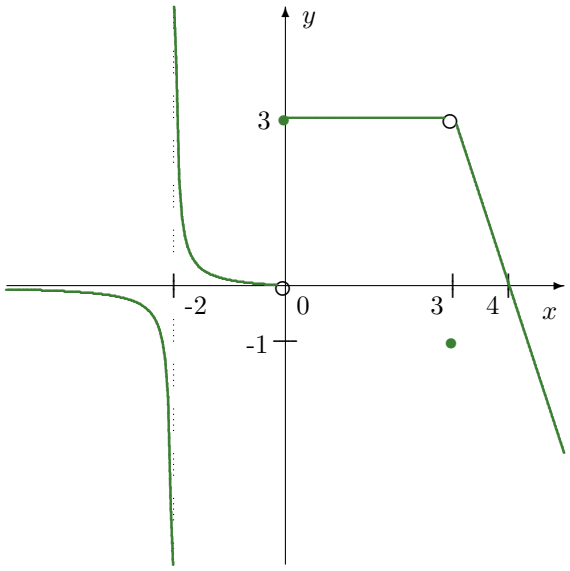

Figure 1: The graph of $y = f(x)$ for Question 1.

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2. Sketch the graph of the function

$$f(x) = \frac{7x - |9x|}{4x}$$

and use it to determine each of the following.

(a) $\lim_{x \to 0^-} f(x)$ (b) $\lim_{x \to 0^+} f(x)$ (c) $\lim_{x \to 0} f(x)$

(d) $\lim_{x \to 4} f(x)$ (e) $\lim_{x \to -\frac{6}{5}} f(x)$

3. Using a calculator, construct a table of values to deduce each limit.

(a) $\lim_{x \to 4} \dfrac{2x^2 - 7x - 4}{3x^2 - 14x + 8}$

(b) $\lim_{x \to 0} \dfrac{\tan^2(x)}{\cos(5x) - 1}$

(c) $\lim_{x \to -1} \dfrac{3x^2 - 9x - 12}{x^3 + 7x^2 + 15x + 9}$

(d) $\lim_{x \to -3} \dfrac{3x^2 - 9x - 12}{x^3 + 7x^2 + 15x + 9}$