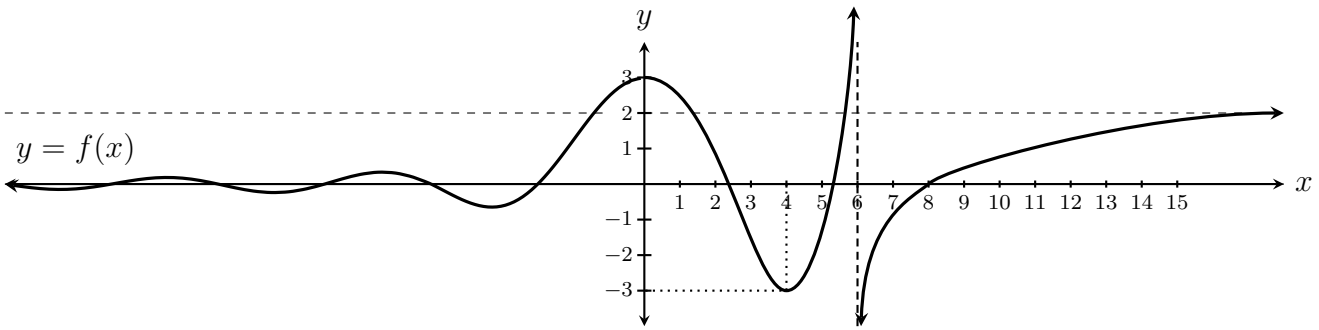
Name: _____

Quiz 4

MATH 200
September 5, 2023

Directions: Find the limits. Show all steps. Simplify your answer.

1. (8 points) Answer the following questions about the function $y = f(x)$ graphed below.



(a) $\lim_{x \to -\infty} f(x) =$

(b) $\lim_{x \to \infty} f(x) =$

(c) $\lim_{x \to 6^-} f(x) =$

(d) $\lim_{x \to 6^+} f(x) =$

(e) $\lim_{x \to 0} \dfrac{1}{f(x) - 3} =$

(f) $\lim_{x \to 6} \dfrac{1}{f(x)} =$

(g) $\lim_{x \to 8^-} \dfrac{1}{f(x)} =$

(h) $\lim_{x \to 8^+} \dfrac{1}{f(x)} =$

2. (4 points) $\lim_{x \to \infty} e^{1/x} =$

3. (4 points) $\lim_{x \to \infty} \dfrac{x^2 + 2x + 1}{-x^2 + 4x + 5} =$

4. (4 points) $\lim_{x \to 5^+} \dfrac{x^2 + 2x + 1}{-x^2 + 4x + 5} =$

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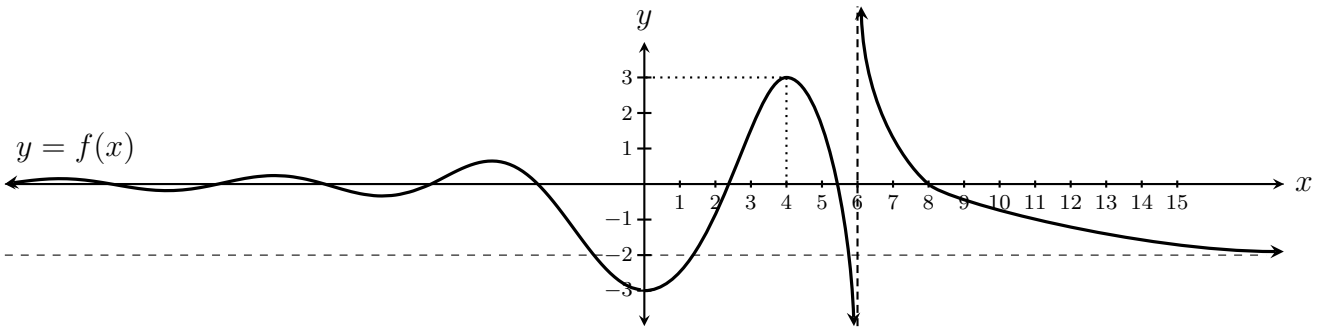

(a) $\lim_{x \to 6^-} f(x) =$

(b) $\lim_{x \to 6^+} f(x) =$

(c) $\lim_{x \to -\infty} f(x) =$

(d) $\lim_{x \to \infty} f(x) =$

(e) $\lim_{x \to 8^-} \dfrac{1}{f(x)} =$

(f) $\lim_{x \to 8^+} \dfrac{1}{f(x)} =$

(g) $\lim_{x \to 6} \dfrac{1}{f(x)} =$

(h) $\lim_{x \to 4} \dfrac{1}{f(x) - 3} =$

2. (4 points) $\lim_{x \to \infty} \ln\left(\dfrac{1}{x}\right) =$

3. (4 points) $\lim_{x \to 3^+} \dfrac{x^2 + 5x + 6}{x^2 - 9} =$

4. (4 points) $\lim_{x \to \infty} \dfrac{x^2 + 5x + 6}{x^2 - 9} =$