

MTH 1125 Test #1 - (12 pm class)

FALL 2023

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Name _____

Instructions. Show CLEARLY how you arrive at your answers.

1. Compute: $\lim_{x \rightarrow 3} \frac{x^2+2x-8}{x^2+3x+5} =$

2. Compute: $\lim_{x \rightarrow 3} \frac{x^2-x-6}{2x^2-5x-3} =$

3. Compute: $\lim_{x \rightarrow 2} \frac{x^2+2x-9}{x^2+2x-8} =$

4. Compute: $\lim_{x \rightarrow -\infty} \frac{8x^6+5x-5}{4x^4+6x^3-8x} =$

5. $f(x) = \frac{2x^2 - 2x - 3}{x^2 + x - 2}$ Find the asymptotes and graph

6. Compute: $\lim_{x \rightarrow 5} \frac{\sqrt{x+11}-4}{x-5} =$

7.

$x =$	$f(x) =$	$x =$	$f(x) =$
1.5	-10	2.5	10
1.9	-100	2.1	100
1.99	-1,000	2.01	1,000
1.999	-10,000	2.001	10,000
1.9999	-100,000	2.0001	100,000

Based on the information in the table above, compute/do the following:

(a) $\lim_{x \rightarrow 2^-} f(x) =$

(b) $\lim_{x \rightarrow 2^+} f(x) =$

(c) Graph $f(x)$

8. Determine whether or not $f(x)$ is continuous at the point $x = 3$. (Justify Your Answer)

$$f(x) = \begin{cases} 2x + 3 & \text{for } x < 3 \\ 9 & \text{for } x = 3 \\ 5x - 6 & \text{for } x > 3 \end{cases}$$