MTH 1125 Test #1 - (12 pm class)

FALL 2022

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Instructions. Show CLEARLY how you arrive at your answers.

1. Compute: $\lim_{x\to 3} \frac{x^2+4x-8}{x^2+2x+5} =$

2. Compute: $\lim_{x\to 3} \frac{x^2-8x+15}{2x^2-5x-3} =$

3. Compute: $\lim_{x\to -4} \frac{x^2+2x-9}{x^2+2x-8} =$

4. Compute: $\lim_{x\to -\infty} \frac{9x^4+7x-5}{4x^5+6x^3-8x} =$

5. $f(x) = \frac{x^2-2x-3}{x^2-8x+16} = \frac{x^2-2x-3}{(x-4)^2}$ Find the asymptotes and graph

6. Compute: $\lim_{x\to 8} \frac{\sqrt{x+1}-3}{x-8} =$

7.

$x =$	$f(x) =$
-10	1.5
-100	1.9
$-1,000$	1.99
$-10,000$	1.999
$-100,000$	1.9999

$x =$	$f(x) =$
10	-1.5
100	-1.9
$1,000$	-1.99
$10,000$	-1.99
$100,000$	-1.9999

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

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

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

(c) Graph $f(x)$

8. Determine whether or not $f(x)$ is continuous at the point $x = 4$. (Justify Your Answer)

$$f(x) = \begin{cases} 3x - 3 & \text{for } x < 4 \\ 9 & \text{for } x = 4 \\ x^2 - 7 & \text{for } x > 4 \end{cases}$$