MTH 1125 Test #1 - (2 pm class)

FALL 2022

Pat Rossi Name _____

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: $\lim_{x\to 3} \frac{x^2-8x+15}{2x^2-7x+3} =$

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

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

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

6. Compute: $\lim_{x\to 10} \frac{\sqrt{x-1}-3}{x-10} =$

7.

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

$x =$	$f(x) =$
2.5	10
2.1	100
2.01	$1,000$
2.001	$10,000$
2.0001	$100,000$

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

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

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

(c) Graph $f(x)$

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

$$f(x) = \begin{cases} 4x - 4 & \text{for } x < 4 \\ 12 & \text{for } x = 4 \\ x^2 - 4 & \text{for } x > 4 \end{cases}$$