MTH 1125 Test #1

SUMMER 2020

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Instructions. Show CLEARLY how you arrive at your answers.

1. Compute: $\lim_{x\to 2} \frac{2x^2+x+4}{2x^2+3x-12} =$

2. Compute: $\lim_{x\to 5} \frac{x^2-4x-5}{x^2-8x+15} =$

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

4. Compute: $\lim_{x\to -\infty} \frac{3x^5+7x^2-8}{5x^4+2x^3-2x} =$

5. $f(x) = \frac{x^2+3x-4}{x^2+x-6}$ Find the asymptotes and graph

6. Compute: $\lim_{x\to 2} \frac{\sqrt{x+7}-3}{x-2} =$

7.

$x =$	$f(x) =$
-0.5	3.6
-0.1	30.8
-0.01	318.9
-0.001	$3,241.9$
-0.0001	$35,342.2$

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

(a) $\lim_{x\to 0^-} f(x) =$

(b) $\lim_{x\to 0^+} f(x) =$

(c) Graph $f(x)$

8. Determine whether or not $f(x)$ is continuous at the point $x = 2$.

$$f(x) = \begin{cases} 4x - 2 & \text{for } x < 2 \\ 6 & \text{for } x = 2 \\ 5x - 4 & \text{for } x > 2 \end{cases}$$