

MTH 1125 (10 am) Test #1

FALL 2010

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Name _____

Instructions. Show CLEARLY how you arrive at your answers

1. Compute: $\lim_{x \rightarrow 2} \frac{x^2 - x - 2}{x^2 + 3x - 10} =$

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

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

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

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

6.

$x =$	$f(x) =$	$x =$	$f(x) =$
1.5	15.1	2.5	-15.1
1.9	227.8	2.1	-227.8
1.99	1212.3	2.01	-1212.3
1.999	21156.3	2.001	-21156.3
1.9999	834561.9	2.0001	-834561.9

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

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

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

(c) Graph $f(x)$

7. Determine whether $f(x)$ is continuous at the point $x = 3$.

$$f(x) = \begin{cases} \frac{x^2 - 2x - 3}{x - 3} & \text{for } x < 3 \\ 2x - 3 & \text{for } x \geq 3 \end{cases}$$

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