

MTH 1125 (1pm) - Test #1

FALL, 2004

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Name _____

Instructions. Show CLEARLY how you arrive at your answers.

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

2. Compute: $\lim_{x \rightarrow 2} \frac{x^2 - x - 6}{3x^2 + 1} =$

3. Compute: $\lim_{x \rightarrow 7} \frac{\sqrt{x+9} - 4}{x-7} =$

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

5. $f(x) = \frac{2x^2}{x^2-9}$ Find the asymptotes and graph.

6. ~

x	$f(x)$
1.0	3.25
1.5	56.789
1.9	488.78
1.99	7768.12
1.999	15877.79

x	$f(x)$
3.0	-6.25
2.5	-96.789
2.1	-788.78
2.01	-12768.12
2.001	-45877.79

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

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

(c) Sketch a graph of $f(x)$

7. Compute, using the properties of limits. Document each step.

$$\lim_{x \rightarrow 1} \left[\frac{3x^2 - 2x}{x^2 - 5x + 3} \right] =$$