

MTH 1125 (10am) - Test #1

FALL, 2004

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Name _____

Instructions. Show CLEARLY how you arrive at your answers.

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

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

3. Compute: $\lim_{x \rightarrow 5} \frac{\sqrt{9-x} - 2}{x-5} =$

4. Compute: $\lim_{x \rightarrow 2} \frac{x^2 - 9}{x^2 - 5x + 6} =$

5. $f(x) = \frac{3x^2}{x^2+x-2}$ 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.

$$\lim_{x \rightarrow 1} [(3x^2 - 2x)(x^2 - 5x + 3)] =$$