

# MTH 1125 (1pm Class) - Test #1

FALL 2018

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Name \_\_\_\_\_

**Instructions** Show CLEARLY how you arrive at you answers!

1. Compute:  $\lim_{x \rightarrow 3} \frac{x^2+6x-12}{x^2+2x+12} =$

2. Compute:  $\lim_{x \rightarrow 6} \frac{x^2-9x+18}{x^2-5x-6} =$

3. Compute:  $\lim_{x \rightarrow 2} \frac{x^2+4x-9}{x^2+4x-12} =$

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

5.  $f(x) = \frac{x^2+4x+3}{x^2-3x-10}$  Find the asymptotes and graph

6. Compute:  $\lim_{x \rightarrow 1} \frac{\sqrt{x+8}-3}{x-1} =$

7.

$x =$	$f(x) =$	$x =$	$f(x) =$
-10	10.87	10	10.87
-100	1.12	100	1.12
-1000	1.009	1000	1.009
-10,000	1.0023	10,000	1.0023
-100,000	1.00009	100,000	1.00009

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

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

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

(c) Graph  $f(x)$

**Extra:** (Wow! 10 points) Show CLEARLY how you arrive at your answer!

Compute:  $\lim_{x \rightarrow -\infty} \frac{3x+5}{\sqrt{x^2+6x+9}} =$