

Math 2143 - Brief Calculus with Applications

Homework #5 - 2008.02.12

Due Date - 2008.02.19

Name: _____

Compute the following limits. SHOW ALL YOUR WORK.

1.

$$\lim_{x \rightarrow 3} \frac{x^2 - 4x + 3}{x^2 + x - 12}$$

2.

$$\lim_{x \rightarrow 1} \frac{x^4 - 1}{x - 1}$$

3.

$$\lim_{x \rightarrow 4} \frac{\sqrt{x} - 2}{x - 4}$$

4.

$$\lim_{x \rightarrow 2} \frac{x - 2}{x^3 - 4x}$$

5.

$$\lim_{h \rightarrow 0} \frac{\frac{1}{(h+2)^2} - \frac{1}{4}}{h}$$

6.

$$\lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{x}$$

7.

$$\lim_{h \rightarrow 0} \frac{(1+h)^3 - 1}{h}$$

8.

$$\lim_{x \rightarrow 27} \frac{x - 27}{x^{\frac{1}{3}} - 3}$$

9.

$$\lim_{x \rightarrow a} \frac{\sqrt{x} - \sqrt{a}}{x - a}$$

10.

$$\lim_{h \rightarrow 0} \frac{\sqrt{a+2h} - \sqrt{a}}{h}$$