MTH 1125 Test #1 (1 pm class)

SPRING 2010

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Instructions. Show CLEARLY how you arrive at your answers.

1. Compute: $\lim_{x\to 2} \frac{x^2+1}{x+4} =$

2. Compute: $\lim_{x\to 2} \frac{x^2-4}{x^2-x-2} =$

3. Compute: $\lim_{x\to -1} \frac{x^2-4}{x^2-x-2} =$

4. $f(x) = \begin{cases} \frac{x^3-8}{x-2} & \text{for } x < 2 \\ 6x+2 & \text{for } x \geq 2 \end{cases}$

Determine whether or not $f(x)$ is continuous at the point $x = 2$. (Justify your answer.)

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

6. Compute: $\lim_{x\to 1} \frac{\sqrt{10-x}-3}{x-1} =$

7. $f(x) = x^2+4x-2$; Compute $f'(x)$ **using the definition of derivative.** (i.e. compute $f'(x)$ using the "limit process.")

8. Compute: $\lim_{x\to\infty} \frac{6x^5+3x^4-8x-5}{3x^4+4x^2-8x} =$