

Math 2215 - Calculus 1

Quiz #11 - 2005.11.09

Name: _____

Consider the function $f(x) = \frac{x}{x^2-1}$. Answer the following questions.

1. State the domain of $f(x)$.
2. Find all the roots of $f(x)$.
3. Compute $f'(x)$.
4. Find all the critical numbers of $f(x)$.
5. Determine the intervals of increase and decrease of $f(x)$.
6. Compute $f''(x)$.
7. Determine the intervals of concavity for $f(x)$.
8. Find the inflection points of $f(x)$ based upon your answer to problem 7.
9. Does $f(x)$ have any horizontal asymptotes? If so, where?
10. Compute the following limits:

$$\lim_{x \rightarrow -1^-} f(x)$$

$$\lim_{x \rightarrow -1^+} f(x)$$

$$\lim_{x \rightarrow 1^-} f(x)$$

$$\lim_{x \rightarrow 1^+} f(x)$$

11. Use your answers from problems 1-10 to graph $f(x)$.