

Your name: _____

Quiz no. 4 (1100-2 Quantitative Analysis,
Spring 2008)
February 29, 2008

25 min. No symbolic calculators allowed (TI-89 and similar)!
(TI-86 or lower are allowed.) Show all work.

Let $f(x) = \frac{x^2}{x^2-1}$. Find

- all vertical and horizontal asymptotes of f ,
- the intervals where $f(x)$ is increasing and decreasing,
- all relative minimum and maximum points,
- the intervals where $f(x)$ is concave up or concave down.

Then sketch the graph of $f(x)$.

You may use that $f'(x) = -\frac{2x}{(x-1)^2(x+1)^2}$ and $f''(x) = \frac{6x^2+2}{(x-1)^3(x+1)^3}$.