Find the following for $f(x) = \frac{x^2}{x^2-4} = \frac{x^2}{(x+2)(x-2)}$ (if they exist; if they don't exist, state so). Use this information to graph f.

Note $f'(x) = \frac{-8x}{(x^2-4)^2}$, $f''(x) = \frac{8(3x^2+4)}{(x^2-4)^3}$

[1.5] 1a.) critical numbers: _____

[1.5] 1b.) local maximum(s) occur at $x =$ _____

[1.5] 1c.) local minimum(s) occur at $x =$ _____

[1.5] 1d.) The global maximum of f on the interval [0, 5] is _____ and occurs at $x =$ _____

[1.5] 1e.) The global minimum of f on the interval [0, 5] is _____ and occurs at $x =$ _____

[1.5] 1f.) Inflection point(s) occur at $x =$ _____

[1.5] 1g.) f increasing on the intervals _____

[1.5] 1h.) f decreasing on the intervals _____

[1.5] 1i.) f is concave up on the intervals _____

[1.5] 1j.) f is concave down on the intervals_____

[1.5] 1k.) Equation(s) of vertical asymptote(s)_____

[4] 1l.) Equation(s) of horizontal and/or slant asymptote(s)_____

[4.5] 1m.) Graph f