Section 3.6

Guidelines for Analyzing the Graph of a Function

1. Determine the domain and range of the function.
2. Determine the intercepts, asymptotes, and symmetry of the graph.
3. Locate the x-values for which $f'(x)$ and $f''(x)$ either are zero or do not exist. Use the results to determine relative extrema and points of inflection.

1) Analyze and sketch the graph of $f(x) = \dfrac{x}{x^2 - 1}$. Be sure you identify *all* of the parts of the graph.

2) Analyze and sketch the graph of $f(x) = \frac{x^2+5x+3}{x-1}$.

3) Analyze and sketch the graph of $f(x) = \frac{x}{\sqrt{x^2+4}}$.

4) Analyze and sketch the graph of $f(x) = 3x^{2/3} - 2x$

5) Analyze and sketch the graph of $f(x) = x^4 - 6x^3 + 12x^2 - 8x$.

6) Analyze and sketch the graph of $f(x) = x + \cos x$ on the interval $(0, 2\pi)$.

Homework for this section: Read the section and watch the videos/tutorials. Then do these problems in preparation for the quiz: #7, 13, 21, 59