Goal: To use our knowledge of algebra and calculus to create an accurate and complete graph of a function.

A complete graph of a function shows:

1. Intercepts (if possible)

2. Discontinuities (holes and vertical asymptotes)

3. Horizontal Asymptotes

5. Intervals of increasing/decreasing behavior, as well as maximums/minimums

6. Concavity and Points of Inflection

BEFORE beginning a curve sketching problem, determine the DOMAIN of the function. In addition, considering the SYMMETRY of a graph may help you do your analysis more quickly.

-example- Sketch a complete graph of $f(x) = x^3 - 7x^2 + 8x - 1$

-example- Sketch a complete graph of the function $f(x) = \dfrac{3x}{x+2}$

-example- Sketch a complete graph of the function $f(x) = \dfrac{4x}{\sqrt{x-3}}$

-example- Sketch a complete graph of the function $f(x) = \cos x - \dfrac{1}{4}\cos 2x, 0 \leq x \leq 2\pi$