Section 4.4 Graphing Functions

# Topic 1: Graphing Guidelines

We have now collected the tools required for a comprehensive approach to graphing functions. The following guidelines summarize the analytical methods for identifying the key features of the graph of a function. The precise order of the steps may vary depending on the function.

**Guidelines for Graphing **

1. Identify the domain or interval of interest.
2. Exploit symmetry.
3. Find the first and second derivatives.
4. Find critical points and possible inflection points.
5. Find the interval(s) on which the function is increasing or decreasing and concave up or down.
6. Identify extreme values and inflection points.
7. Locate all asymptotes and determine the end behavior.
8. Find the intercepts.
9. Use the results of the previous steps to graph the function.

# Topic 2: Graphing Practice