

AP Calculus BC
Lesson 4.5 Curve Sketching

1. Consider the function $f(x) = x(x+2)^3$. Use **non-calculator** methods to find all of the following:
 - a. Interval(s) on which f is increasing
 - b. local maximum(s) and/or minimum(s)
 - c. interval(s) on which f is concave up
 - d. inflection points
 - e. x- and y- intercepts
 - f. a good sketch of the curve with all features labeled

2. Consider the function $f(x) = \frac{x}{x^2 + 9}$. Use non-calculator methods to find all of the following:
- Interval(s) on which f is increasing
 - local maximum(s) and/or minimum(s)
 - interval(s) on which f is concave up
 - inflection points
 - x- and y- intercepts
 - the equations of all asymptotes
 - a good sketch of the curve with all features labeled