

3.6 A summary of Curve Sketching

1. Use f to find
 - a. x or y intercepts
 - b. locations where f is undefined
 - c. any vertical asymptotes
2. Use f' to find
 - a. intervals where increasing/decreasing
 - b. critical values
 - c. extrema
3. Use f'' to find
 - a. intervals where CU or CD
 - b. possible POI
 - c. extrema
4. Check limits at $\pm \infty$ for
 - a. horizontal asymptotes
 - b. other end behavior
5. Sketch a graph to match the details found.

$$\text{ex. } f(x) = \frac{2(x^2-9)}{x^2-4}$$

$$\text{ex. } f(x) = x^4 - 12x^3 + 48x^2 - 64x$$

ex. $f(x) = \sin x - \cos x$