Curve Sketching Information

1. **Domain:** When is $f(x)$ defined?

2. **Intercepts:**
    - (i) y-intercept $\Leftrightarrow$ set $x = 0$
    - (ii) x-intercept $\Leftrightarrow$ set $y = 0$

3. **Asymptotes:**
    - (i) Horizontal Asymptotes: $\displaystyle\lim_{x \to \pm\infty} f(x) = L$
    - (ii) Vertical Asymptotes: $\displaystyle\lim_{x \to a} f(x) = \pm\infty$

4. **First Derivative Information:**
   Critical points, increasing, decreasing, max/min

5. **Second Derivative Information:** Inflection points, concavity

6. **Sketch the graph:** Plot all important points, connect the dots