3.6 – Curve Sketching

We will use all of the information provided to us by the first and second derivatives to aid in sketching curves.

We will also need . . .

Intercepts

An *x*-intercept is a point on the graph that crosses the *x*-axis.

A *y*-intercept is a point on the graph that crosses the *y*-axis.

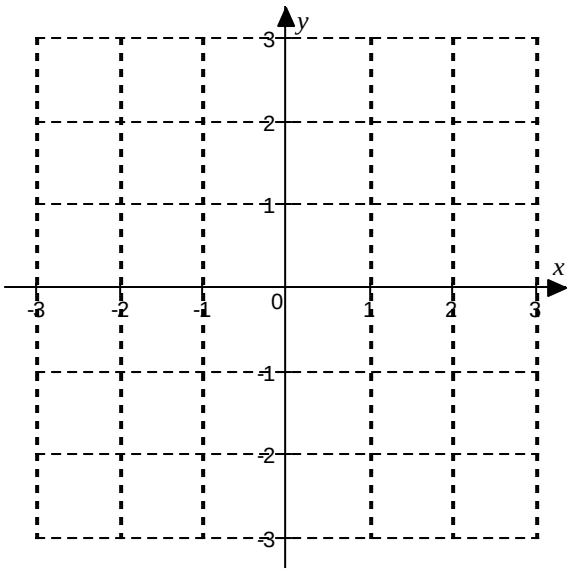
Vertical Asymptote

The line $x = a$ is a vertical asymptote of f if $\lim_{x \to a^-} f(x) = \pm\infty$ AND/OR $\lim_{x \to a^+} f(x) = \pm\infty$.

Horizontal Asymptote

The line $y = b$ is a horizontal asymptote of f if $\lim_{x \to -\infty} f(x) = b$ AND/OR $\lim_{x \to \infty} f(x) = b$.

1. Sketch a graph of the curve $h(x) = 5x^3 - 3x^5$.



2. Sketch a graph of the curve $g(x) = \dfrac{x}{(x+1)^2}$.