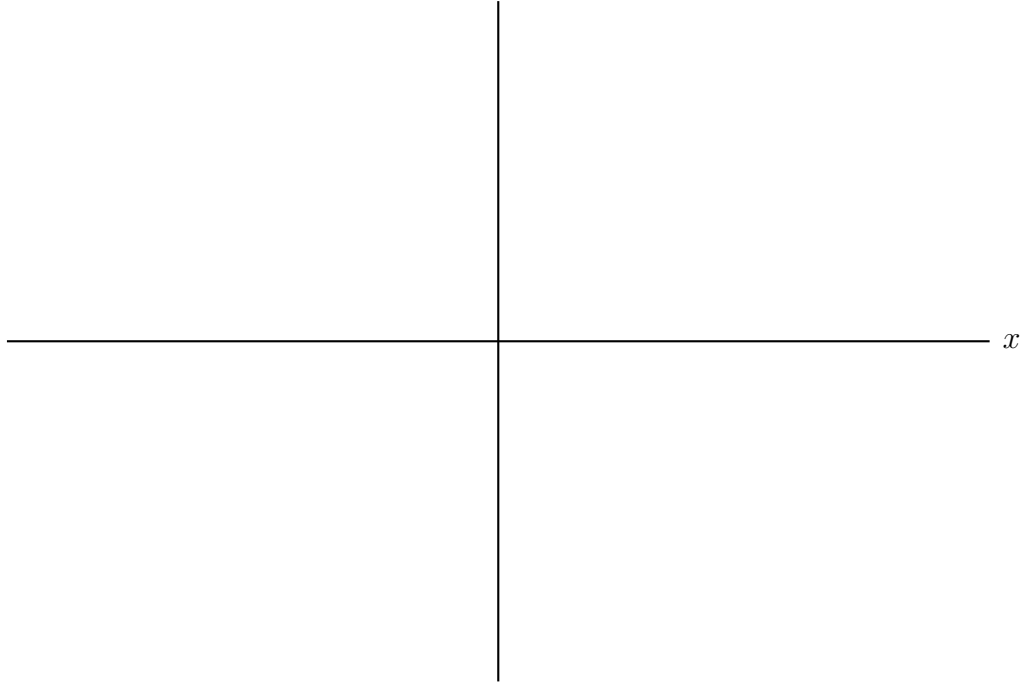**4.** [12 points]

The two parts below are independent. Be sure to label any relevant features of your graphs.

   a. [6 points] Draw an example of a continuous function $f(x)$ such that

       • f has a critical point at $x = -2$ and $f'(-2) \neq 0$, and

       • f has a critical point at $x = 3$ and $f'(3) = 0$.

x

   b. [6 points] Draw the *derivative* of a function $g(x)$ satisfying

       • g is decreasing on the interval $(-\infty, 0)$, and

       • $g''(x) > 0$ when $x > 0$.

x