- **9.** [10 points] On the axes below, sketch a well-labeled graph of a function f(x), defined for all x, satisfying the following properties:
  - f(0) = 0.
  - $\lim_{x\to 1} f(x)$  exists but f(x) is not continuous at x=1.
  - f'(x) is increasing on the interval (3,5).
  - f''(x) changes sign at x = -3.
  - f'(4) > 0.
  - f(x) = f(x+5) for all x.

You need only show the graph on the domain [-5, 5].

