

8. [11 points] On the axes provided below, sketch the graph of a single function  $y = f(x)$  satisfying all of the following conditions:

- The domain of  $f(x)$  is the interval  $-8 < x \leq 6$ .
- $f(x)$  is continuous for all  $x$  in the interval  $-8 < x < -2$ .
- $f'(-7) = 0$ .
- $f(x)$  is decreasing and concave up for all  $x$  in the interval  $-6 < x < -4$ .
- The average rate of change of  $f(x)$  is equal to 0.5 between  $x = -5$  and  $x = -2$ .
- $f(0) = 2$  and  $f'(0) = -1$ .
- $\lim_{x \rightarrow 2^-} f(x) = f(2)$  and  $\lim_{x \rightarrow 2^+} f(x) < \lim_{x \rightarrow 2^-} f(x)$ .
- $f(x)$  has constant rate of change on the interval  $3 \leq x \leq 6$ .

Make sure that your graph is large and unambiguous.

