

8. (6 points) On the axes below, sketch a possible graph of a single function  $y = g(x)$  satisfying all of the properties below: [Label your points on the axes.]

(i)  $g(x)$  is defined and continuous for all values of  $x$ .

(ii)  $g(x)$  has critical points at  $x = -1$  and  $x = 4$ .

(iii)  $g'(x) \geq 0$  on  $(-\infty, 4)$ .

(iv)  $g(x)$  is decreasing on  $(4, \infty)$ .

(v)  $\lim_{x \rightarrow \infty} g(x) = -2$ .

