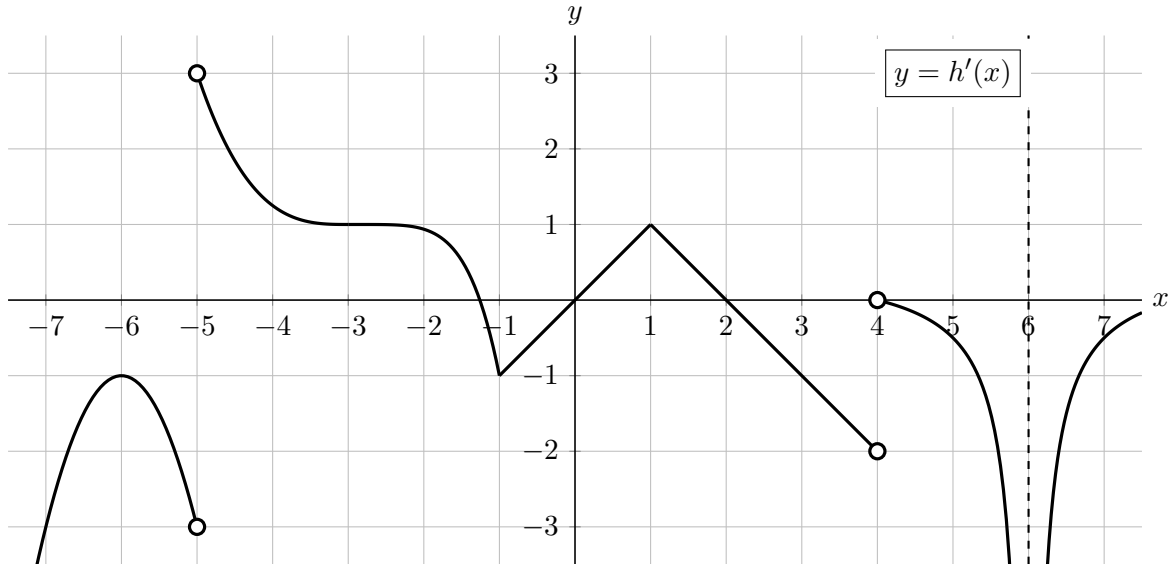**1.** [12 points] A function $h(x)$ is defined and continuous on $(-\infty, \infty)$. A portion of the graph of $h'(x)$, **the derivative of** $h(x)$, is shown below. Note that $h'(x)$ has a vertical asymptote at $x = 6$.

In each part **a.–f.** below, select **all** correct choices.

a. [2 points] At which of the following value(s) does $h(x)$ have a critical point?

$x = -6$ $\qquad$ $x = -3$ $\qquad$ $x = 0$ $\qquad$ $x = 1$ $\qquad$ NONE OF THESE

b. [2 points] At which of the following value(s) does $h(x)$ have a local minimum?

$x = -5$ $\qquad$ $x = -1$ $\qquad$ $x = 2$ $\qquad$ $x = 6$ $\qquad$ NONE OF THESE

c. [2 points] At which of the following value(s) does $h(x)$ have an inflection point?

$x = -6$ $\qquad$ $x = -5$ $\qquad$ $x = -3$ $\qquad$ $x = 6$ $\qquad$ NONE OF THESE

d. [2 points] On which of the following interval(s) is $h(x)$ increasing on the entire interval?

$(-5, -3)$ $\qquad$ $(-1, 1)$ $\qquad$ $(6, 7)$ $\qquad$ NONE OF THESE

e. [2 points] On which of the following interval(s) is $h(x)$ concave down on the entire interval?

$(-7, -5)$ $\qquad$ $(-5, -3)$ $\qquad$ $(-1, 1)$ $\qquad$ NONE OF THESE

f. [2 points] On which of the following interval(s) is $h''(x)$ decreasing on the entire interval?

$(-7, -5)$ $\qquad$ $(-5, -3)$ $\qquad$ $(-1, 1)$ $\qquad$ NONE OF THESE