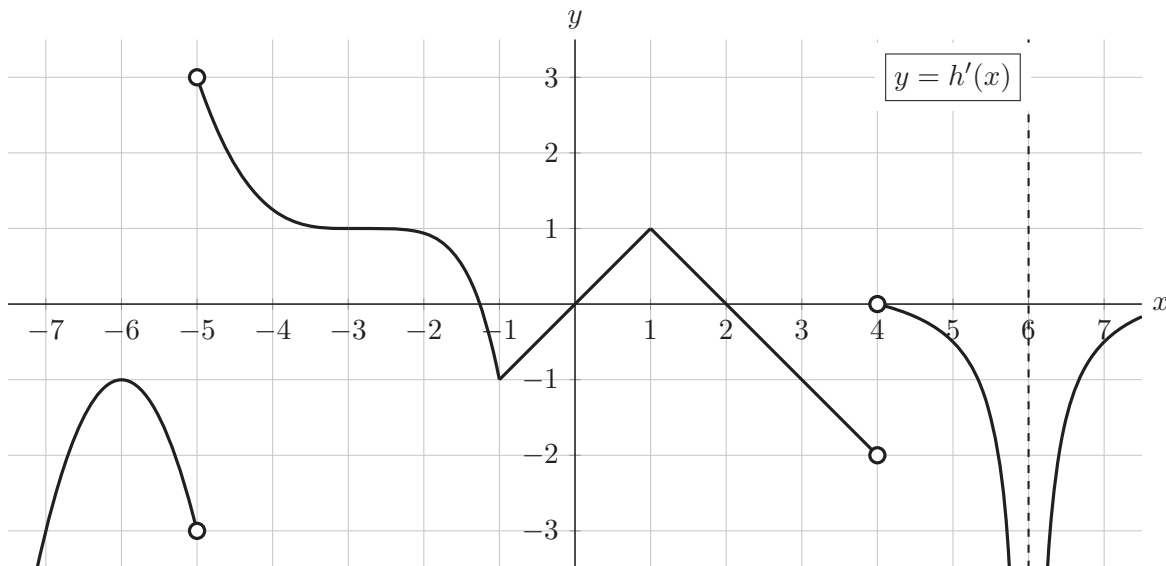


Note: exam problem numbering is off by 1

2. [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?

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

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

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

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

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

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

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

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

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

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

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