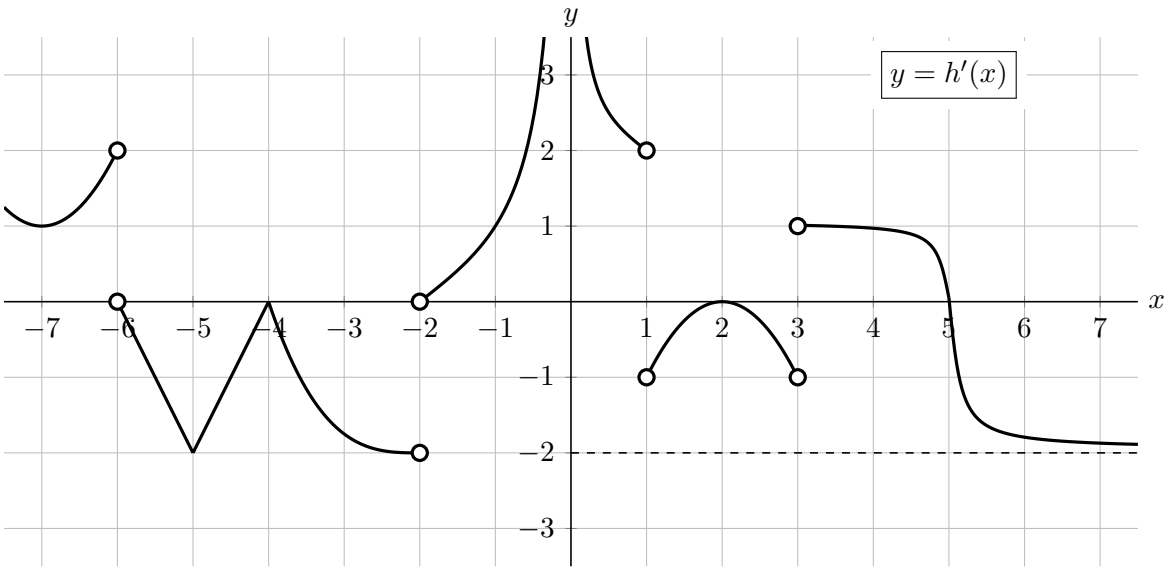
10. [14 points] A function $h(x)$ is defined and continuous on $(-\infty, \infty)$. A portion of the graph of $h'(x)$, **the derivative of** $h(x)$, is shown below. Note that $x = 0$ is a vertical asymptote of $y = h'(x)$ and that $y = -2$ is a horizontal asymptote, as indicated.



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

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

$x = -7$ $x = -5$ $x = -2$ $x = 0$ $x = 5$ NONE OF THESE

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

$x = -6$ $x = -4$ $x = 0$ $x = 1$ $x = 5$ NONE OF THESE

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

$x = -7$ $x = -4$ $x = 0$ $x = 2$ $x = 5$ NONE OF THESE

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

$x = -6$ $x = 0$ $x = 1$ $x = 2$ $x = 5$ NONE OF THESE

e. [2 points] On which of the following intervals does $h'(x)$ satisfy the hypotheses of the Mean Value Theorem?

$[-5.5, -4.5]$ $[-4, -3]$ $[-4, 5]$ $[4, 5]$ NONE OF THESE

f. [2 points] On which of the following intervals does $h'(x)$ satisfy the conclusion of the Mean Value Theorem?

$[-5.5, -4.5]$ $[-4, -3]$ $[-4, 5]$ $[4, 5]$ NONE OF THESE

g. [2 points] Find the following limits. If there is not enough information, write NEI. If a limit diverges to ∞ or $-\infty$ or if the limit does not exist for any other reason, write DNE.

$\lim_{x\to\infty} h(x) =$ _____ $\lim_{x\to\infty} h'(x) =$ _____