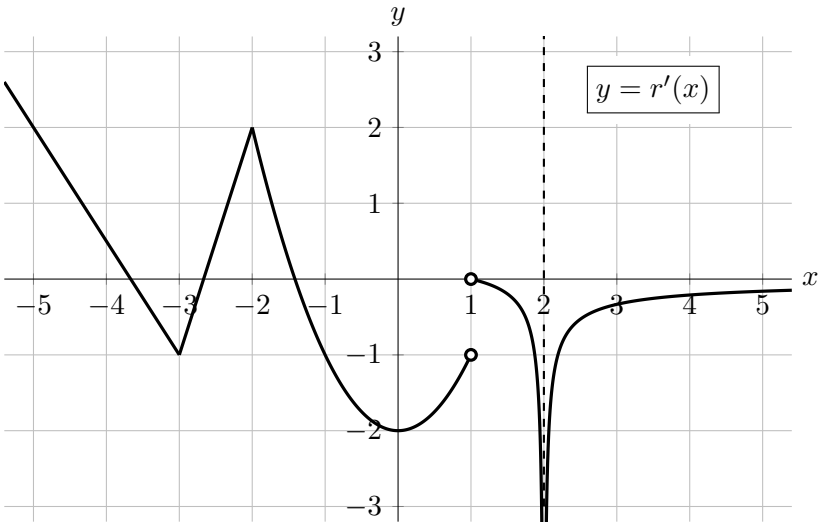
7. [10 points] Given below is a portion of the graph of $r'(x)$, the derivative of the continuous function $r(x)$, along with a table of some values of $r(x)$. Note that $r'(x)$ has a vertical asymptote at $x = 2$. Use the graph and the table to answer the questions below. *You do not need to show work.*



x	-3	-2	1	2
$r(x)$	6.5	7	4	??

a. [1 point] Circle all of the x values below at which the function $r'(x)$ is not continuous.

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

b. [6 points] Find the **exact** numerical value of each expression below, if possible. For any values that do not exist, including if they are limits that diverge to $\pm\infty$, write DNE.

i. $\lim_{x\to 0} r'(x) =$ _____

ii. $\lim_{x\to 1^-} r'(x) =$ _____

iii. $\lim_{x\to 2^+} \dfrac{1}{r'(x)} =$ _____

iv. $\lim_{x\to -1} r'(2x+3) =$ _____

v. $\lim_{h\to 0} \dfrac{r'(-4+h) - r'(-4)}{h} =$ _____

vi. $\lim_{t\to 0} \dfrac{r(-2+t) - 7}{t} =$ _____

c. [1 point] Given that $r(2)$ is one of the five values below, determine which one it is by circling the one correct answer.

$\frac{10}{3}$ 4 5 $\frac{16}{3}$ $4 + 2^{1/3}$

d. [2 points] Find an equation of the line tangent to the graph of $r(x)$ at $x = -3$.

Answer: $y =$ _____