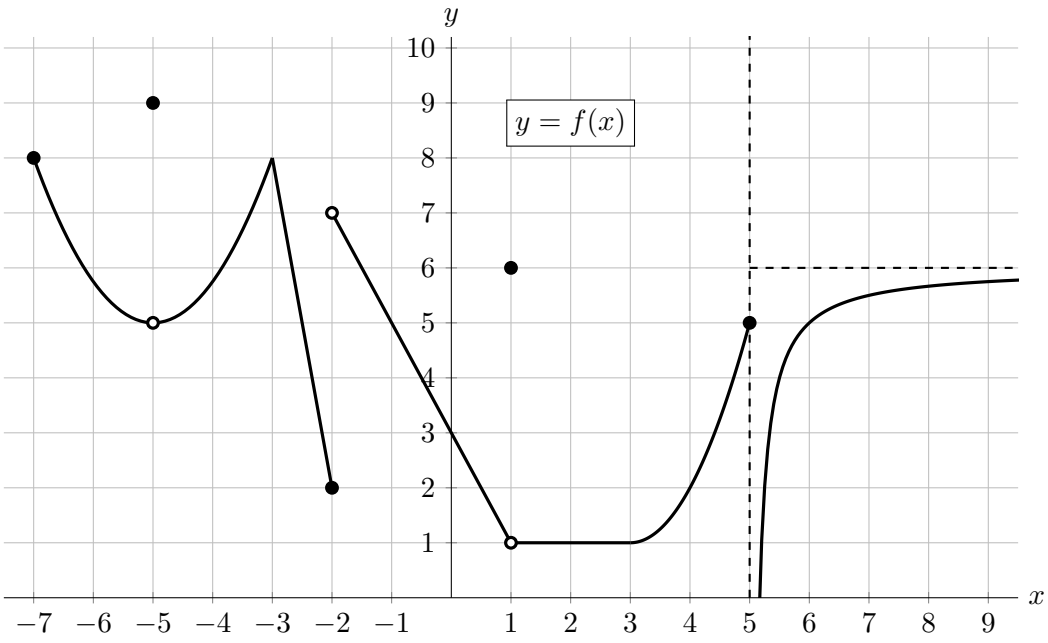
6. [14 points] Below is a portion of the graph of a function $f(x)$ with domain $[-7, \infty)$. Note that $f(x)$ is linear for $-3 < x < -2$ and $-2 < x < 1$, and that $f(x)$ has a vertical asymptote of $x = 5$ and a horizontal asymptote of $y = 6$.



Evaluate each of the following quantities. If a limit diverges to ∞ or $-\infty$ or if the limit does not exist for any other reason, write DNE. You do not need to show work in this problem.

a. [2 points] $\lim_{x \to -2^+} f(x)$

Answer: $=$ _____

b. [2 points] $\lim_{x \to -5} f(x)$

Answer: $=$ _____

c. [2 points] $\lim_{h \to 0} \dfrac{f(h) - f(0)}{h}$

Answer: $=$ _____

d. [2 points] $\lim_{x \to -5^-} f(-x)$

Answer: $=$ _____

e. [2 points] $\lim_{x \to 2} f(f(x))$

Answer: $=$ _____

Define the function $g(x) = \dfrac{1}{3} f(2x) + 7$. Fill in the blanks below.

f. [2 points] The function $g(x)$ has a horizontal asymptote of $y =$ _____ .

g. [2 points] The function $g(x)$ has a vertical asymptote of $x =$ _____ .