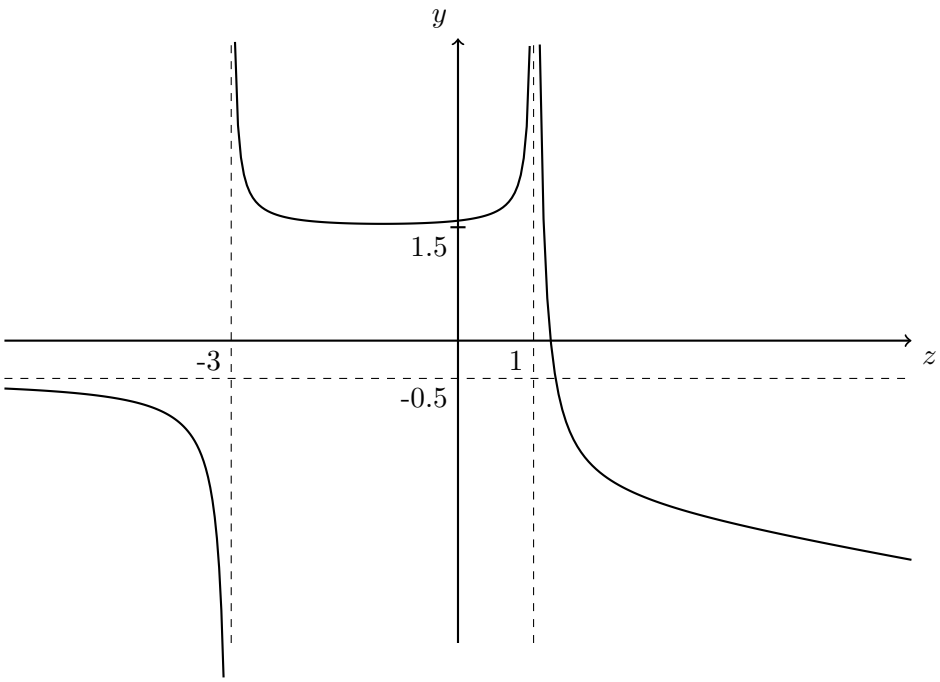
5. [6 points] Consider the following graph of a function $A(z)$. Assume the behavior of $A(z)$ depicted on the left and right of the graph continues as z approaches $-\infty$ and ∞, respectively.



a. [3 points] Write down equations for all vertical and horizontal asymptotes of $A(z)$.

The vertical asymptote(s) of $A(z)$ are $z = -3,\ z = 1$

The horizontal asymptote(s) of $A(z)$ are $w = -0.5$

b. [3 points] Calculate the following limits.

(i) $\lim_{z \to -3^+} A(z) =$ $+\infty$

(iii) $\lim_{z \to 3^+} A(-z) =$ $-\infty$

(iv) $\lim_{z \to -\infty} 3A(z/2) =$ -1.5