

Challenge problem, understanding graphs of rational functions: Find a formula for a function $f(x)$ such that

- $f(3) = 0$
- $f(x)$ is even
- f has a horizontal asymptote at $y = 2$
- f has vertical asymptotes at $x = 4$ and $x = -4$
- $f(0) = 1$ (Meeting this requirement is the trickiest part!)