

Note that there are two problems, the second of which is on page 2.

1. Consider the rational function

$$f(x) = \frac{3(x+2)(x-1)(x-3)}{(x+2)^2(x-1)}$$

- (a) Write f in “simplest” form.
- (b) What is its domain?
- (c) What (if any) are its x -intercepts (i.e., zeros)?
- (d) What (if any) are its horizontal asymptotes?
- (e) What (if any) are its vertical asymptotes?

2. Determine a rational function g having vertical asymptotes at $x = -3$ and $x = 2$, a horizontal asymptote at $y = 3$, and a lone x -intercept (i.e., zero) at $x = 1$.