

Asymptotes

1. Find all the vertical asymptotes and horizontal or oblique asymptotes of the functions below. Based on the horizontal or oblique asymptotes, describe as precisely as possible the behavior of each function as $x \rightarrow \infty$.

(a) $y = \frac{x+1}{x+2}$

(b) $y = \frac{x+1}{x^2+2}$

(c) $y = \frac{x-1}{x^2-2}$

(d) $y = \frac{x^2-1}{x-2}$

(e) $g(x) = \frac{2x+3}{x^2+2x-3}$.