

Asymptotes

1. State a possible equation of the rational function with the following features:

a) vertical asymptote $x = -3$, horizontal asymptote $y = 2$, x-intercept -1

b) vertical asymptote $x = 5$, horizontal asymptote $y = -1$, x-intercepts $-6, 8$

c) vertical asymptotes $x = -9$ and $x = 7$, no horizontal asymptote, x-intercepts $4, 8$

d) vertical asymptote $x = 3$, horizontal asymptote $y = 0$, x-intercepts $1, -2$,
hole at $x = 5$

2. Find the equation of the linear oblique asymptote.

a) $y = \frac{2x^2 + 4}{x + 1}$

b) $y = -3x + 9 - \frac{4}{2x + 7}$