Find the vertical asymptote of $f(x) = \frac{6x - 4}{x - 3}$.

Find the horizontal asymptote of $f(x) = \frac{x}{-5x - 6}$.

Find the vertical asymptote of $f(x) = \frac{2x + 7}{x - 5}$.

Find the horizontal asymptote of $f(x) = \frac{5x + 4}{2x + 9}$.

Find the vertical asymptote of $f(x) = \frac{6x - 9}{x + 4}$.

Find the horizontal asymptote of $f(x) = \frac{-6x}{x + 4}$.

Find the vertical asymptote of $f(x) = \frac{3x - 2}{x - 1}$.

Find the horizontal asymptote of $f(x) = \frac{3x + 7}{-4x - 8}$.

Rational Functions: Asymptotes & Holes · 2

ANSWER

$$y = -\frac{1}{5}$$

Rational Functions: Asymptotes & Holes · 1

ANSWER

$$x = 3$$

Rational Functions: Asymptotes & Holes · 4

ANSWER

$$y = \frac{5}{2}$$

Rational Functions: Asymptotes & Holes · 3

ANSWER

$$x = 5$$

Rational Functions: Asymptotes & Holes · 6

ANSWER

$$y = -6$$

Rational Functions: Asymptotes & Holes · 5

ANSWER

$$x = -4$$

Rational Functions: Asymptotes & Holes · 8

ANSWER

$$y = -\frac{3}{4}$$

Rational Functions: Asymptotes & Holes · 7

ANSWER

$$x = 1$$

Find the vertical asymptote of $f(x) = \frac{3x + 1}{x + 4}$.

Find the horizontal asymptote of $f(x) = \frac{x - 4}{x + 1}$.

Find the horizontal asymptote of $f(x) = \frac{4x + 1}{3x - 5}$.

Find the vertical asymptote of $f(x) = \frac{x}{x - 1}$.

Find the horizontal asymptote of $f(x) = \frac{-x}{x^2 - 7x - 3}$. If there is none, write none.

Find the horizontal asymptote of $f(x) = \frac{2x}{4x + 9}$.

Find the vertical asymptotes of $f(x) = \frac{-4x + 9}{x^2 - 3x - 28}$. Write them as $x = a$ or $x = b$.

Find the horizontal asymptote of $f(x) = \frac{4x + 9}{-3x + 7}$.

Rational Functions: Asymptotes & Holes · 10

ANSWER

$$y = 1$$

Rational Functions: Asymptotes & Holes · 9

ANSWER

$$x = -4$$

Rational Functions: Asymptotes & Holes · 12

ANSWER

$$x = 1$$

Rational Functions: Asymptotes & Holes · 11

ANSWER

$$y = \frac{4}{3}$$

Rational Functions: Asymptotes & Holes · 14

ANSWER

$$y = \frac{1}{2}$$

Rational Functions: Asymptotes & Holes · 13

ANSWER

$$y = 0$$

Rational Functions: Asymptotes & Holes · 16

ANSWER

$$y = -\frac{4}{3}$$

Rational Functions: Asymptotes & Holes · 15

ANSWER

$$x = 7 \text{ or } x = -4$$

Find the hole in the graph of $f(x) = \frac{x^2 - 4x - 12}{x^2 + 6x + 8}$. Write it as a point (x, y).

Find the horizontal asymptote of $f(x) = \frac{3x - 9}{x^2 + x - 4}$. If there is none, write none.

Find the vertical asymptotes of $f(x) = \frac{3x - 2}{x^2 + 7x}$. Write them as x = a or x = b.

Find the hole in the graph of $f(x) = \frac{x^2 + 4x - 5}{x^2 + 11x + 30}$. Write it as a point (x, y).

Find the horizontal asymptote of $f(x) = \frac{4x^2 - 2x}{x - 6}$. If there is none, write none.

Find the vertical asymptote of $f(x) = \frac{6x - 9}{x - 1}$.

Find the horizontal asymptote of $f(x) = \frac{-2x}{-3x - 7}$.

Find the vertical asymptote of $f(x) = \frac{-4x + 5}{x + 7}$.

Rational Functions: Asymptotes & Holes · 18

ANSWER

$y = 0$

Rational Functions: Asymptotes & Holes · 17

ANSWER

$(-2, -4)$

Rational Functions: Asymptotes & Holes · 20

ANSWER

$(-5, -6)$

Rational Functions: Asymptotes & Holes · 19

ANSWER

$x = 0$ or $x = -7$

Rational Functions: Asymptotes & Holes · 22

ANSWER

$x = 1$

Rational Functions: Asymptotes & Holes · 21

ANSWER

none

Rational Functions: Asymptotes & Holes · 24

ANSWER

$x = -7$

Rational Functions: Asymptotes & Holes · 23

ANSWER

$y = \frac{2}{3}$