Rational Functions: Asymptotes & Holes · 1

Find the vertical asymptotes of $f(x) = \frac{-6x + 6}{x^2 + 11x + 28}$. Write them as x = a or x = b.

Rational Functions: Asymptotes & Holes · 2

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

Rational Functions: Asymptotes & Holes · 3

Find the hole in the graph of $f(x) = \frac{x^2 - 6x + 5}{x^2 - 1}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 4

Find the horizontal asymptote of $f(x) = \frac{-3x + 5}{x^2 + 4x - 5}$. If there is none, write none.

Rational Functions: Asymptotes & Holes · 5

Find the vertical asymptotes of $f(x) = \frac{-6x + 6}{x^2 - 10x + 24}$. Write them as x = a or x = b.

Rational Functions: Asymptotes & Holes · 6

Find the hole in the graph of $f(x) = \frac{x^2 - 8x + 12}{x^2 - 11x + 30}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 7

Find the horizontal asymptote of $f(x) = \frac{3x^2 - 5x - 4}{x + 1}$. If there is none, write none.

Rational Functions: Asymptotes & Holes · 8

Find the vertical asymptotes of $f(x) = \frac{-6x + 2}{x^2 - 2x - 35}$. Write them as x = a or x = b.

Rational Functions: Asymptotes & Holes · 2

ANSWER

$$y = -\frac{1}{3}$$

Rational Functions: Asymptotes & Holes · 1

ANSWER

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

Rational Functions: Asymptotes & Holes · 4

ANSWER

$$y = 0$$

Rational Functions: Asymptotes & Holes · 3

ANSWER

$$(1, -2)$$

Rational Functions: Asymptotes & Holes · 6

ANSWER

$$(6, 4)$$

Rational Functions: Asymptotes & Holes · 5

ANSWER

$$x = 6 \text{ or } x = 4$$

Rational Functions: Asymptotes & Holes · 8

ANSWER

$$x = 7 \text{ or } x = -5$$

Rational Functions: Asymptotes & Holes · 7

ANSWER

none

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 $f(x) = \frac{-2x - 5}{-3x - 1}$.

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

Find the horizontal asymptote of $f(x) = \frac{6x^2 - 7x + 1}{x + 5}$. If there is none, write none.

Find the vertical asymptotes of $f(x) = \frac{-x}{x^2 - 4x - 21}$. Write them as x = a or x = b.

Find the horizontal asymptote of $f(x) = \frac{-5x + 1}{x^2 + 7x - 5}$. If there is none, write none.

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

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

Rational Functions: Asymptotes & Holes · 10

ANSWER

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

Rational Functions: Asymptotes & Holes · 9

ANSWER

(5, -6)

Rational Functions: Asymptotes & Holes · 12

ANSWER

none

Rational Functions: Asymptotes & Holes · 11

ANSWER

(0, 4)

Rational Functions: Asymptotes & Holes · 14

ANSWER

y = 0

Rational Functions: Asymptotes & Holes · 13

ANSWER

x = 7 or x = -3

Rational Functions: Asymptotes & Holes · 16

ANSWER

(2, -3)

Rational Functions: Asymptotes & Holes · 15

ANSWER

x = 4 or x = -7

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

Find the hole in the graph of $f(x) = \frac{x^2 + 8x + 15}{x^2 + 7x + 12}$. Write it as a point (x, y).

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

Find the vertical asymptotes of $f(x) = \frac{6x - 8}{x^2 + 3x - 28}$. Write them as x = a or x = b.

Find the horizontal asymptote of $f(x) = \frac{-5x + 2}{x^2 - 2x + 1}$. If there is none, write none.

Find the vertical asymptotes of $f(x) = \frac{5x + 8}{x^2 - 4x + 3}$. Write them as x = a or x = b.

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

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

Rational Functions: Asymptotes & Holes · 18

ANSWER

(-3, 2)

Rational Functions: Asymptotes & Holes · 17

ANSWER

$$y = -\frac{1}{4}$$

Rational Functions: Asymptotes & Holes · 20

ANSWER

x = 4 or x = -7

Rational Functions: Asymptotes & Holes · 19

ANSWER

none

Rational Functions: Asymptotes & Holes · 22

ANSWER

x = 3 or x = 1

Rational Functions: Asymptotes & Holes · 21

ANSWER

y = 0

Rational Functions: Asymptotes & Holes · 24

ANSWER

(-2, -2)

Rational Functions: Asymptotes & Holes · 23

ANSWER

y = -1