Rational Functions: Asymptotes & Holes · 1

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

Rational Functions: Asymptotes & Holes · 2

Find the hole in the graph of $f(x) = \frac{x^2 + 5x - 24}{x^2 - 5x + 6}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 3

Find the horizontal asymptote of $f(x) = \frac{2x - 2}{-4x - 7}$.

Rational Functions: Asymptotes & Holes · 4

Find the hole in the graph of $f(x) = \frac{x^2 + 8x + 7}{x^2 - 4x - 5}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 5

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

Rational Functions: Asymptotes & Holes · 6

Find the vertical asymptotes of $f(x) = \frac{2x - 5}{x^2 - 2x - 24}$. Write them as x = a or x = b.

Rational Functions: Asymptotes & Holes · 7

Find the horizontal asymptote of $f(x) = \frac{6x - 5}{x^2 - 7x + 3}$. If there is none, write none.

Rational Functions: Asymptotes & Holes · 8

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

Rational Functions: Asymptotes & Holes · 2

ANSWER

(3, 11)

Rational Functions: Asymptotes & Holes · 1

ANSWER

x = 1 or x = -2

Rational Functions: Asymptotes & Holes · 4

ANSWER

(-1, -1)

Rational Functions: Asymptotes & Holes · 3

ANSWER

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

Rational Functions: Asymptotes & Holes · 6

ANSWER

x = 6 or x = -4

Rational Functions: Asymptotes & Holes · 5

ANSWER

none

Rational Functions: Asymptotes & Holes · 8

ANSWER

x = -4 or x = -6

Rational Functions: Asymptotes & Holes · 7

ANSWER

y = 0

Rational Functions: Asymptotes & Holes · 9

Find the hole in the graph of $f(x) = \frac{x^2 - 36}{x^2 + 6x}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 10

Find the horizontal asymptote of $f(x) = \frac{6x - 3}{2x + 7}$.

Rational Functions: Asymptotes & Holes · 11

Find the hole in the graph of $f(x) = \frac{x^2 + 2x - 8}{x^2 + 9x + 20}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 12

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

Rational Functions: Asymptotes & Holes · 13

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

Rational Functions: Asymptotes & Holes · 14

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

Rational Functions: Asymptotes & Holes · 15

Find the vertical asymptotes of $f(x) = \frac{x - 1}{x^2 - 9x + 20}$. Write them as x = a or x = b.

Rational Functions: Asymptotes & Holes · 16

Find the hole in the graph of $f(x) = \frac{x^2 - 4x - 5}{x^2 + 8x + 7}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 10

ANSWER

y = 3

Rational Functions: Asymptotes & Holes · 9

ANSWER

(-6, 2)

Rational Functions: Asymptotes & Holes · 12

ANSWER

none

Rational Functions: Asymptotes & Holes · 11

ANSWER

(-4, -6)

Rational Functions: Asymptotes & Holes · 14

ANSWER

y = 0

Rational Functions: Asymptotes & Holes · 13

ANSWER

x = 4 or x = 1

Rational Functions: Asymptotes & Holes · 16

ANSWER

(-1, -1)

Rational Functions: Asymptotes & Holes · 15

ANSWER

x = 5 or x = 4

Rational Functions: Asymptotes & Holes · 17

Find the horizontal asymptote of $f(x) = \frac{-6x - 5}{-3x - 6}$.

Rational Functions: Asymptotes & Holes · 18

Find the hole in the graph of $f(x) = \frac{x^2 + 4x - 5}{x^2 - 8x + 7}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 19

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

Rational Functions: Asymptotes & Holes · 20

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

Rational Functions: Asymptotes & Holes · 21

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

Rational Functions: Asymptotes & Holes · 22

Find the vertical asymptotes of $f(x) = \frac{-4x + 6}{x^2 - 8x + 12}$. Write them as x = a or x = b.

Rational Functions: Asymptotes & Holes · 23

Find the hole in the graph of $f(x) = \frac{x^2 + x - 6}{x^2 + 7x + 12}$. Write it as a point (x, y).

Rational Functions: Asymptotes & Holes · 24

Find the horizontal asymptote of $f(x) = \frac{2x + 5}{-3x}$.

Rational Functions: Asymptotes & Holes · 18

ANSWER

(1, -1)

Rational Functions: Asymptotes & Holes · 17

ANSWER

y = 2

Rational Functions: Asymptotes & Holes · 20

ANSWER

x = 7 or x = -4

Rational Functions: Asymptotes & Holes · 19

ANSWER

none

Rational Functions: Asymptotes & Holes · 22

ANSWER

x = 6 or x = 2

Rational Functions: Asymptotes & Holes · 21

ANSWER

y = 0

Rational Functions: Asymptotes & Holes · 24

ANSWER

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

Rational Functions: Asymptotes & Holes · 23

ANSWER

(-3, -5)