Rational Functions: Asymptotes & Holes · 1

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

Rational Functions: Asymptotes & Holes · 2

Find the horizontal asymptote of $f(x) = \frac{-8x - 2}{5x + 6}$.

Rational Functions: Asymptotes & Holes · 3

Find the horizontal asymptote of $f(x) = \frac{3x - 5}{x^2 - 2x + 7}$.

Rational Functions: Asymptotes & Holes · 4

Find the x-intercept of $f(x) = \frac{4x + 8}{x - 4}$. Write it as $x = a$.

Rational Functions: Asymptotes & Holes · 5

Find the x-intercept of $f(x) = \frac{x - 4}{x - 1}$. Write it as $x = a$.

Rational Functions: Asymptotes & Holes · 6

Find the x-intercept of $f(x) = \frac{2x - 2}{x + 4}$. Write it as $x = a$.

Rational Functions: Asymptotes & Holes · 7

Find the horizontal asymptote of $f(x) = \frac{x + 6}{3x^2 + x + 9}$.

Rational Functions: Asymptotes & Holes · 8

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

Rational Functions: Asymptotes & Holes · 2

ANSWER

$$y = -\frac{8}{5}$$

Rational Functions: Asymptotes & Holes · 1

ANSWER

$$x = -4$$

Rational Functions: Asymptotes & Holes · 4

ANSWER

$$x = -2$$

Rational Functions: Asymptotes & Holes · 3

ANSWER

$$y = 0$$

Rational Functions: Asymptotes & Holes · 6

ANSWER

$$x = 1$$

Rational Functions: Asymptotes & Holes · 5

ANSWER

$$x = 4$$

Rational Functions: Asymptotes & Holes · 8

ANSWER

$$y = 0$$

Rational Functions: Asymptotes & Holes · 7

ANSWER

$$y = 0$$

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

Find the horizontal asymptote of $f(x) = \frac{-8x + 6}{6x + 5}$.

Find the horizontal asymptote of $f(x) = \frac{3x - 1}{2x^2 - 2x + 5}$.

Find the x-intercept of $f(x) = \frac{3x + 15}{x + 2}$. Write it as x = a.

Find the horizontal asymptote of $f(x) = \frac{6x - 4}{x^2 + 2x + 7}$.

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

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

Find the x-intercept of $f(x) = \frac{x + 4}{x + 2}$. Write it as x = a.

Rational Functions: Asymptotes & Holes · 10

ANSWER

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

Rational Functions: Asymptotes & Holes · 9

ANSWER

$$x = -3$$

Rational Functions: Asymptotes & Holes · 12

ANSWER

$$x = -5$$

Rational Functions: Asymptotes & Holes · 11

ANSWER

$$y = 0$$

Rational Functions: Asymptotes & Holes · 14

ANSWER

$$y = 3$$

Rational Functions: Asymptotes & Holes · 13

ANSWER

$$y = 0$$

Rational Functions: Asymptotes & Holes · 16

ANSWER

$$x = -4$$

Rational Functions: Asymptotes & Holes · 15

ANSWER

$$y = -\frac{7}{2}$$

Find the vertical asymptote of $f(x) = \frac{2x - 8}{x + 5}$.

Find the horizontal asymptote of $f(x) = \frac{5x + 2}{4x + 1}$.

Find the vertical asymptotes of $f(x) = \frac{x - 6}{x^2 - 2x - 15}$.

The graph of $f(x) = \frac{x^2 - 2x - 3}{x - 3}$ has a hole at $x = 3$. Find the y-coordinate of the hole.

Find the x-intercept of $f(x) = \frac{3x - 15}{x + 5}$. Write it as $x = a$.

Find the horizontal asymptote of $f(x) = \frac{5x - 7}{2x^2 - 2x + 8}$.

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

Find the vertical asymptote of $f(x) = \frac{2x + 8}{x - 5}$.

Rational Functions: Asymptotes & Holes · 18

ANSWER

$$y = \frac{5}{4}$$

Rational Functions: Asymptotes & Holes · 17

ANSWER

$$x = -5$$

Rational Functions: Asymptotes & Holes · 20

ANSWER

$$4$$

Rational Functions: Asymptotes & Holes · 19

ANSWER

$$x = -3 \text{ or } x = 5$$

Rational Functions: Asymptotes & Holes · 22

ANSWER

$$y = 0$$

Rational Functions: Asymptotes & Holes · 21

ANSWER

$$x = 5$$

Rational Functions: Asymptotes & Holes · 24

ANSWER

$$x = 5$$

Rational Functions: Asymptotes & Holes · 23

ANSWER

$$x = -2$$