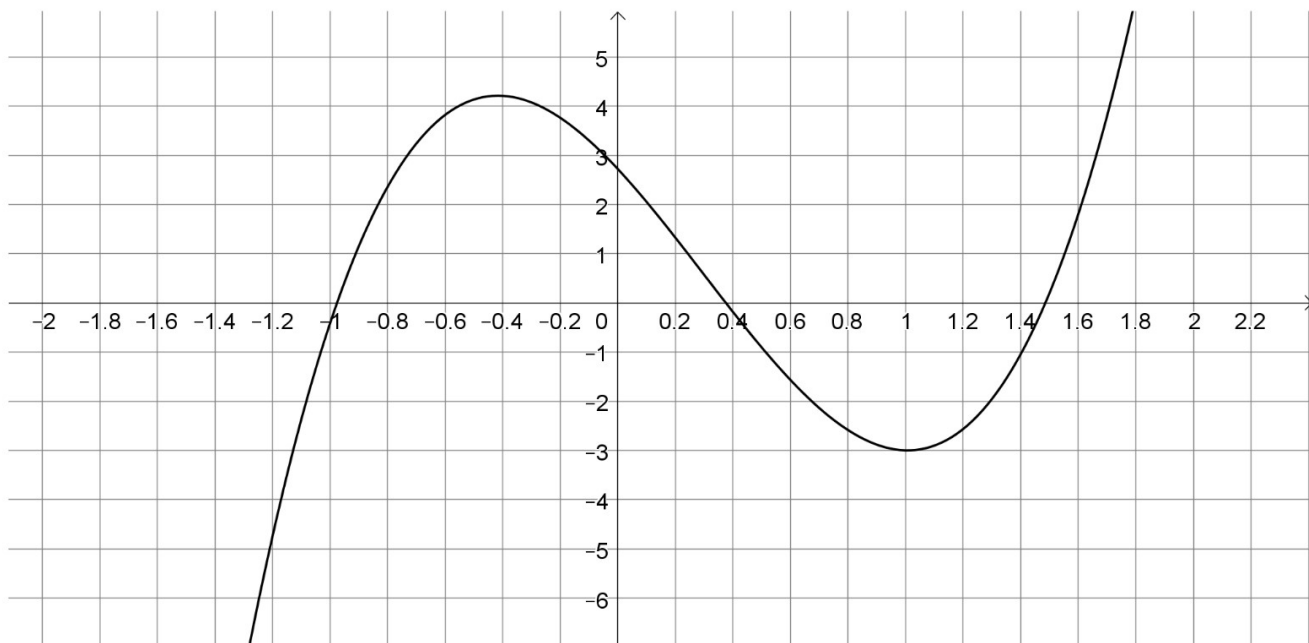


Graphing the Reciprocal of a Function



Finding Zeros and y-intercepts

$$f(x) = \frac{x^2 - 16}{x^2 + 2x - 15}$$

$$g(x) = \frac{x^2 - x - 6}{x^2 + 2x - 15}$$

Finding Vertical Asymptotes

$$f(x) = \frac{x^2 - 9}{2x^2 - 8x}$$

$$g(x) = \frac{x - 7}{x^3 - 5x^2 - 14x}$$

Finding Horizontal Asymptotes

$$f(x) = \frac{x - 7}{5x^2 - 14x + 6}$$

$$g(x) = \frac{x^2 - 7}{x + 6}$$

$$h(x) = \frac{6x^2 + 5x - 7}{2x^2 - 9x + 6}$$

Finding Linear Oblique Asymptotes

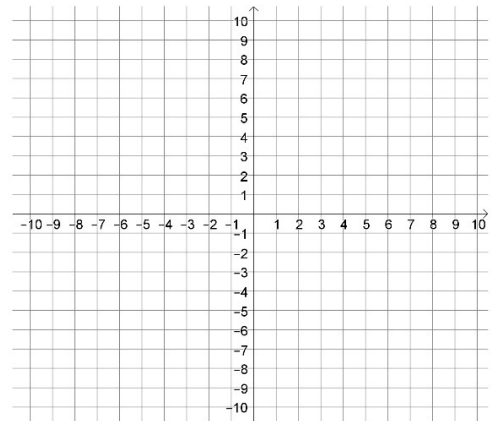
$$f(x) = \frac{5x^2 + 4x - 7}{x + 3}$$

$$g(x) = \frac{9x^3 - 5x + 4}{x^2}$$

$$h(x) = \frac{5x^3 - 6x^2 + x - 2}{x^2 + 2x - 3}$$

Holes

$$f(x) = \frac{x^2 - 2x - 3}{x + 1}$$



$$g(x) = \frac{2x^3 + 8x^2 - 24x}{2x^2 + 15x + 18}$$

Graphing Rational Functions

Sketch the graph of the function $f(x) = \frac{x-1}{x^2-x-2}$

More Graphing Rational Functions

Sketch the graph of the function $f(x) = \frac{x^3 + 3x^2 - 4x}{x^2 + x - 6}$

Solving Rational Equations

$$\text{Solve } \frac{x-3}{x-4} = \frac{x+2}{x+6}$$

More Solving Rational Equations

$$\text{Solve } \frac{2x}{2x+3} - \frac{2x}{2x-3} = 1$$

Word Problems Involving Rational Functions

Jim can paint a wall in 35 minutes. Michelle can paint the same wall in 25 minutes. Working together, how long will it take Jim and Michelle to paint the wall?

More Word Problems Involving Rational Functions

Carm purchased a box of math workbooks for \$300. He gave 15 of them to his closest friends and family and sold the rest to struggling students for \$330, making a profit of \$1.50 on each one. How many workbooks were originally in the box?

More Word Problems Involving Rational Functions

Sally can shovel 4 driveways in 1.2 hours. Working with Harry, she can shovel 9 driveways in 2.3 hours. How long would it take for Harry to shovel 7 driveways on his own?

Solving Rational Inequalities

Solve the inequality $\frac{3}{x+5} < 2$

More Solving Rational Inequalities

Solve the inequality $\frac{x^2 - x - 20}{x^2 - 4x - 12} \leq 0$

More Solving Rational Inequalities

Solve the inequality $\frac{x}{x+5} \geq \frac{x-1}{x+7}$

Average Rate of Change

Determine the average rate of change (secant slope) of $f(x) = \frac{x-2}{x^2+5x-3}$
on the interval $-2 \leq x \leq 3$.

Instantaneous Rate of Change

Determine the instantaneous rate of change (tangent slope) of $f(x) = \frac{x-2}{x^2+5x-3}$
where $x = -1.2$.