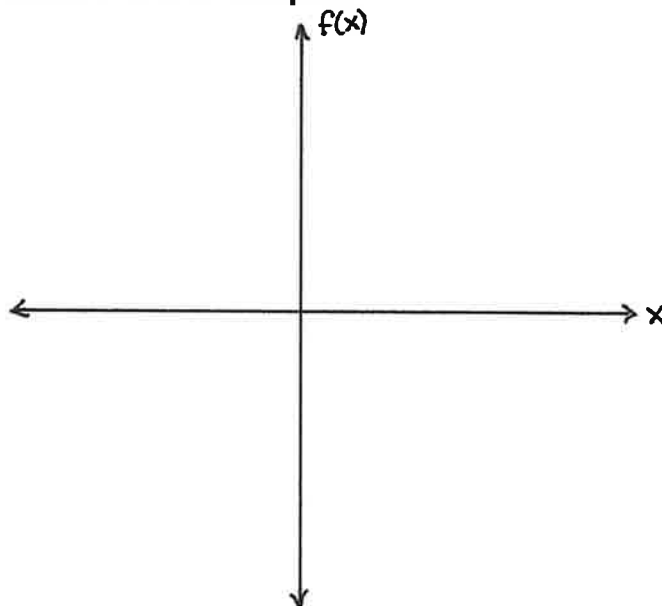


MATH 1314

Chapter 3.5: Rational Functions And Their Graphs

Graph $f(x) = 1/x$.



RATIONAL FUNCTION

DOMAIN: what the function can have for x .

Examples:

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

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

$$f(x) = \frac{x^2-9}{x+3}$$

$$f(x) = \frac{x+5}{x^2+25}$$

ASYMPTOTES

Vertical

Horizontal

Oblique (Slant)

ASYMPTOTES CHECK

$$f(x) = \frac{P(x)}{Q(x)}$$

$$Q(c) = 0$$

$$N < D$$

$$N = D$$

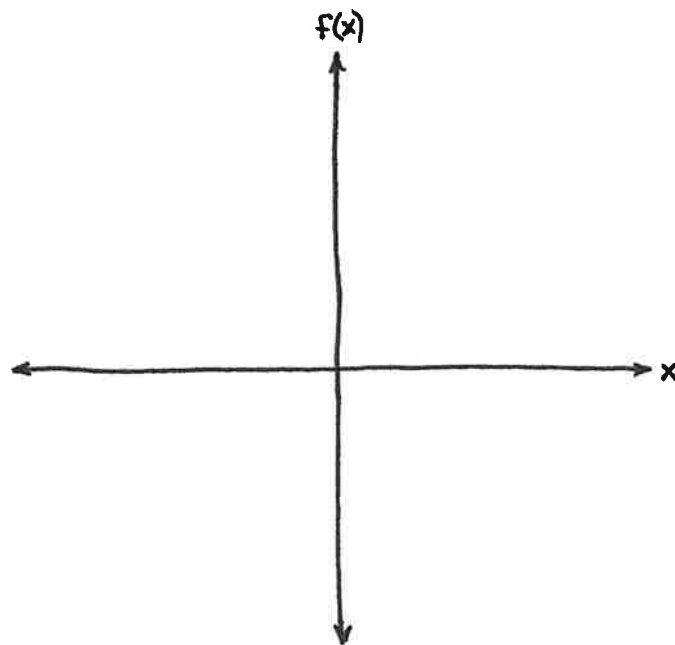
$$N > D$$

$$N = D + 1$$

$$N \geq D + 2$$

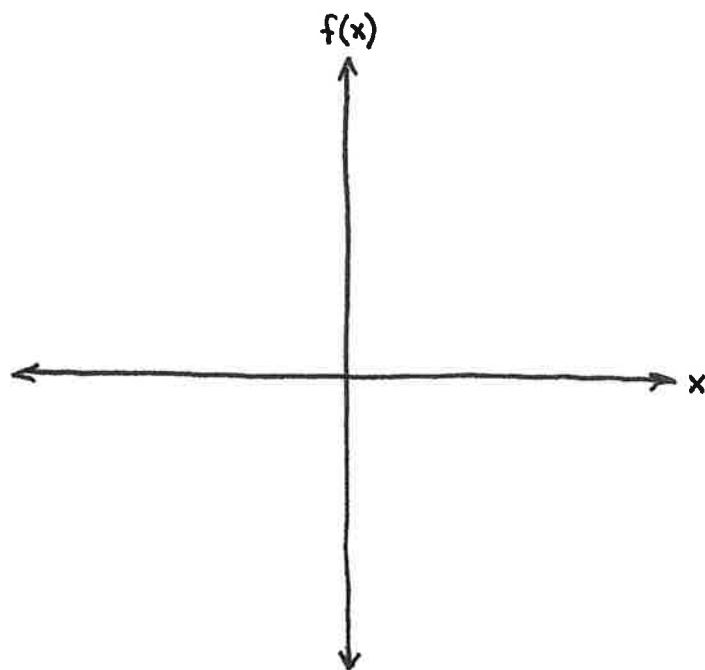
Graph the function.

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



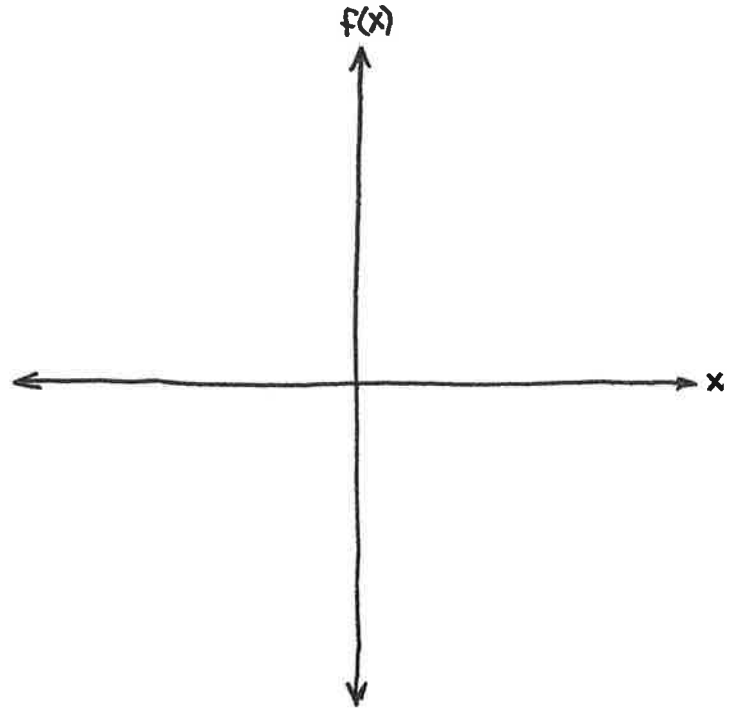
Graph the function.

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



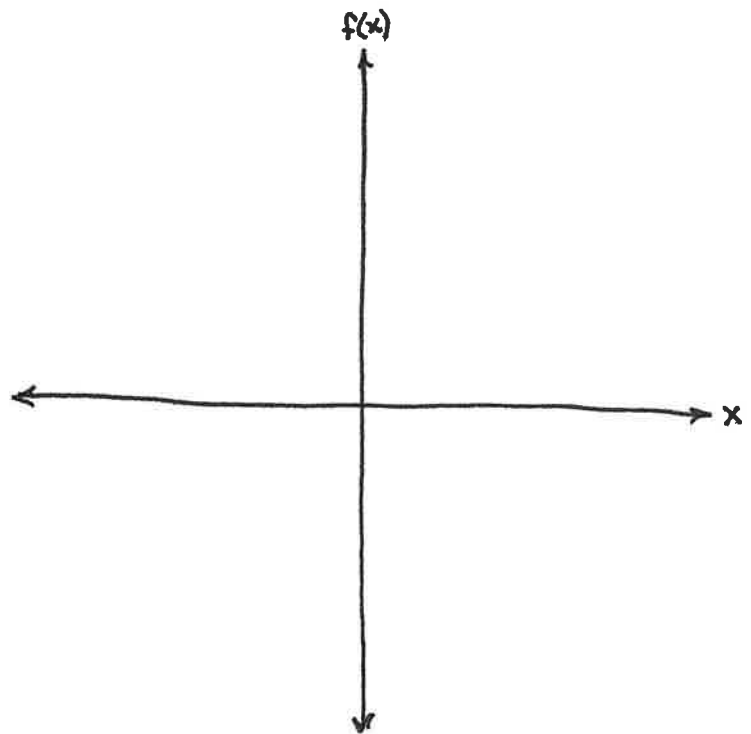
Graph the function.

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



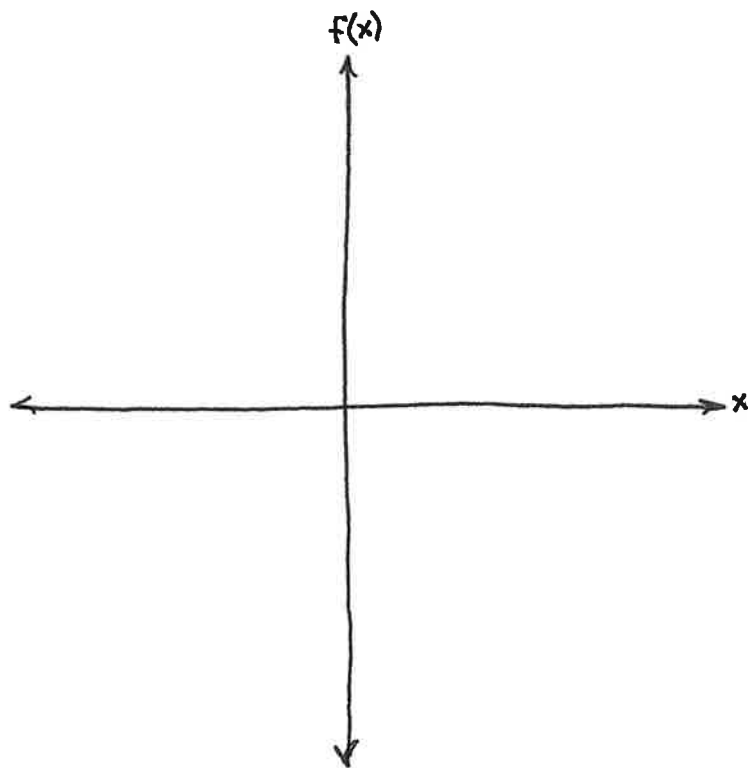
Graph the function.

$$f(x) = \frac{x}{x^2 - 4}$$



Graph the function.

$$f(x) = \frac{4x}{(x+1)^2}$$



Graph the function.

$$f(x) = \frac{x-2}{x^2-4}$$

