

## Section 3.6 Graphs of Rational Functions

**Objective:** In this lesson you learned how to sketch graphs of rational functions.

Course Number

Instructor

Date

### Important Vocabulary

Define each term or concept.

**Slant (or oblique) asymptote**

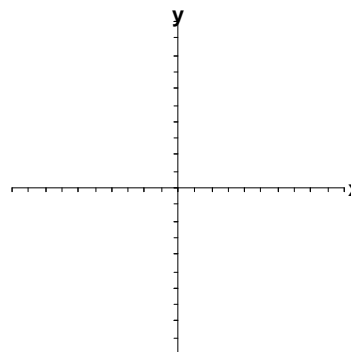
### I. The Graph of a Rational Function (Pages 281–283)

To sketch the graph of the rational function  $f(x) = N(x)/D(x)$ , where  $N(x)$  and  $D(x)$  are polynomials with no common factors, . . .

### *What you should learn*

How to analyze and sketch graphs of rational functions

**Example 1:** Sketch the graph of  $f(x) = \frac{3x}{x+4}$ .



**II. Slant Asymptotes** (Page 284)

To find the equation of a slant asymptote, . . .

***What you should learn***

How to decide whether graphs of rational functions have slant asymptotes

**Example 2:** Decide whether each of the following rational functions has a slant asymptote. If so, find the equation of the slant asymptote.

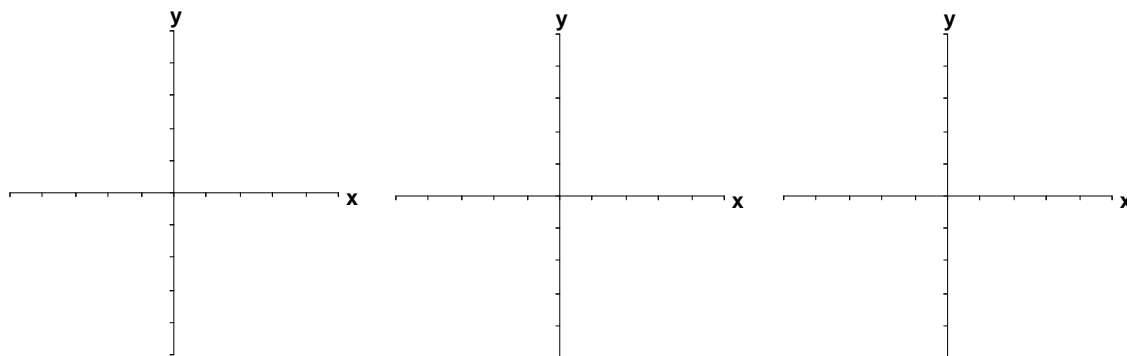
$$(a) f(x) = \frac{x^3 - 1}{x^2 + 3x + 5} \quad (b) f(x) = \frac{3x^3 + 2}{2x - 5}$$

**III. Applications of Graphs of Rational Functions**  
(Page 285)

Describe a real-life situation in which a graph of a rational function would be helpful when solving a problem.

***What you should learn***

How to use rational functions to model and solve real-life problems

**Homework Assignment**

Page(s)

Exercises