

## 6.2 Practice A

In Exercises 1–3, graph the function. Compare the graph with the graph of

$$f(x) = \frac{1}{x}.$$

1.  $h(x) = \frac{2}{x}$

2.  $g(x) = \frac{9}{x}$

3.  $h(x) = \frac{-4}{x}$

In Exercises 4–15, graph the function. State the domain and range.

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

5.  $y = \frac{5}{x} - 1$

6.  $g(x) = \frac{4}{x - 3}$

7.  $y = \frac{1}{x + 4}$

8.  $h(x) = \frac{-1}{x + 3}$

9.  $y = \frac{-4}{x - 5}$

10.  $f(x) = \frac{x + 3}{x - 2}$

11.  $y = \frac{x - 5}{x + 3}$

12.  $g(x) = \frac{x + 4}{2x - 6}$

13.  $y = \frac{5x + 2}{3x - 9}$

14.  $h(x) = \frac{-2x + 3}{3x + 4}$

15.  $y = \frac{8x - 1}{5x - 1}$

In Exercises 16–21, rewrite the function in the form  $g(x) = \frac{a}{x - h} + k$ . Graph the function. Describe the graph of  $g$  as a transformation of the graph of  $f(x) = \frac{a}{x}$ .

16.  $g(x) = \frac{4x + 5}{x + 1}$

17.  $g(x) = \frac{6x + 5}{x - 2}$

18.  $g(x) = \frac{3x - 6}{x - 4}$

19.  $g(x) = \frac{5x - 12}{x + 2}$

20.  $g(x) = \frac{x + 15}{x - 5}$

21.  $g(x) = \frac{x + 3}{x - 9}$

22. Your choir is taking a trip. The trip has an initial cost of \$500, plus \$150 for each student.

- Estimate how many students must go on the trip for the average cost per student to fall to \$175.
- What happens to the average cost as more students go on the trip?

In Exercises 23–25, use a graphing calculator to graph the function. Then determine whether the function is *even*, *odd*, or *neither*.

23.  $f(x) = \frac{5}{x^2 - 1}$

24.  $g(x) = \frac{3x^2}{x^2 + 4}$

25.  $h(x) = \frac{x^3}{2x^2 + x^4}$