

6.2 Practice B

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

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

1. $h(x) = \frac{12}{x}$

2. $g(x) = \frac{-8}{x}$

3. $h(x) = \frac{0.2}{x}$

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

4. $f(x) = \frac{5}{x} - 2$

5. $g(x) = \frac{3}{x+4}$

6. $y = \frac{-8}{x-3}$

7. $h(x) = \frac{-1}{x+5}$

8. $y = \frac{-2}{x+1} + 3$

9. $y = \frac{9}{x-4} - 2$

10. $f(x) = \frac{x+5}{x-4}$

11. $g(x) = \frac{x-3}{2x+8}$

12. $h(x) = \frac{-8x+3}{5x+2}$

13. $y = \frac{3x-1}{5x-1}$

14. $y = \frac{-3x}{-4x-1}$

15. $y = \frac{-2x+5}{-x+8}$

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. $g(x) = \frac{3x+7}{x+2}$

17. $g(x) = \frac{4x-2}{x-3}$

18. $g(x) = \frac{4x-10}{x+5}$

19. $g(x) = \frac{x+12}{x-3}$

20. $g(x) = \frac{5x-30}{x+4}$

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

22. You are creating statues made of cement. The mold costs \$300. The material for each statue costs \$22.

a. Estimate how many statues must be made for the average cost per statue to fall below \$30.

b. What happens to the average cost as more statues are created?

23. The concentration c of a certain drug in a patient's bloodstream t hours after an injection is given by $c(t) = \frac{t}{4t^2 + 1}$.

a. Use a graphing calculator to graph the function. Describe a reasonable domain and range.

b. Determine the time at which the concentration is the highest.