

4.6

Practice A

In Exercises 1–3, solve $y = f(x)$ for x . Then find the input(s) when the output is -3 .

1. $f(x) = 2x + 3$ 2. $f(x) = \frac{1}{3}x - 2$ 3. $f(x) = 8x^3$

In Exercises 4–6, find the inverse of the function. Then graph the function and its inverse.

4. $f(x) = 4x$ 5. $f(x) = 4x - 1$ 6. $f(x) = \frac{1}{2}x - 5$

7. Find the inverse of the function $f(x) = \frac{1}{5}x - 2$ by switching the roles of x and y and solving for y . Then find the inverse of the function f by using inverse operations in the reverse order. Which method do you prefer? Explain.

8. Determine whether each pair of functions f and g are inverses. Explain your reasoning.

a.

x	-2	-1	0	1	2
f(x)	-3	3	9	15	21

b.

x	1	2	3	4	5
f(x)	9	7	5	3	1

x	-3	3	0	15	21
g(x)	-2	-1	0	1	2

x	9	7	5	3	1
g(x)	1	2	3	4	5

In Exercises 9–11, find the inverse of the function. Then graph the function and its inverse.

9. $f(x) = 9x^2, x \geq 0$ 10. $f(x) = 16x^2, x \leq 0$ 11. $f(x) = (x + 2)^3$

In Exercises 12 and 13, use the graph to determine whether the inverse of f is a function. Explain your reasoning.

