

Evaluating Functions

Evaluate each function.

1) $g(n) = 2n + 5$; Find $g(7)$

2) $h(t) = t^2 - 4$; Find $h(-6)$

3) $f(x) = x - 2$; Find $f(7)$

4) $h(x) = x^2 - 2 + x$; Find $h(6)$

5) $g(t) = -2t^3 + 4t^2$; Find $g(-2)$

6) $p(a) = -a^2 + 3$; Find $p(5)$

7) $g(n) = 2n^2 + 4$; Find $g(-9)$

8) $g(x) = -2^x + 3$; Find $g(2)$

9) $f(n) = n - 4$; Find $f(n - 4)$

10) $h(x) = 3x + 3$; Find $h\left(\frac{x}{2}\right)$

11) $g(x) = x^2 + 2$; Find $g(x - 3)$

12) $f(x) = x^2 - 4x$; Find $f(x - 3)$

Perform the indicated operation.

13) $h(x) = 4x + 4$
 $g(x) = 4x - 3$
Find $h(x) + g(x)$

14) $g(a) = -a - 1$
 $h(a) = 2a + 4$
Find $g(a) - h(a)$

15) $f(n) = -2n - 5$
 $g(n) = 2n + 4$
Find $\left(\frac{f}{g}\right)(n)$

16) $g(n) = n^2 - 1$
 $f(n) = 4n$
Find $(g \cdot f)(n)$

17) $g(x) = 3x - 2$
 $h(x) = x + 2$
Find $(g \circ h)(x)$

18) $h(n) = -n - 1$
 $g(n) = n^3 - 5n^2$
Find $(h \circ g)(n)$

19) $f(t) = -2t^3 - 3t^2$
 $g(t) = t + 2$
Find $(f \circ g)(t)$

20) $f(x) = x + 4$
 $g(x) = x^3 + x^2$
Find $(f \circ g)(x)$

Domain & Range

Graph the following functions, and find the domain and range.

1) $f(x) = -2x + 5$

2) $f(x) = x^2 - 3x - 2$

3) $f(x) = -x^2 + 3$

4) $f(x) = 2x^3 + 3x^2 - 5x - 7$

5) $f(x) = \sqrt{x - 3}$

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

7) $f(x) = \frac{x + 2}{x^2 - x - 6}$

8) $f(x) = |3x - 4|$

9) $f(x) = 2^x - 5$

10) $f(x) = \log(x - 6)$

11) $f(x) = 2\sin x - 1$

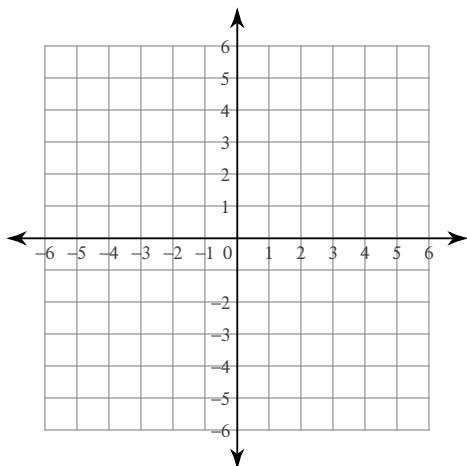
12) $f(x) = -2\cos(x - 1)$

13) $f(x) = x + 1$ when $x < 0$
 $x^2 - 4$ when $x \geq 0$

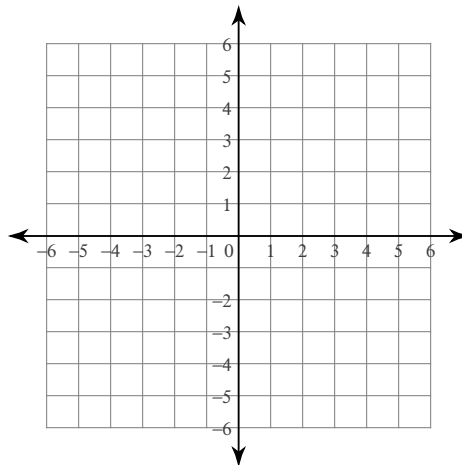
Graphing Functions

Sketch the graph of each function. Then find the domain/range, y-intercept, root(s), extrema, and types of any discontinuities.

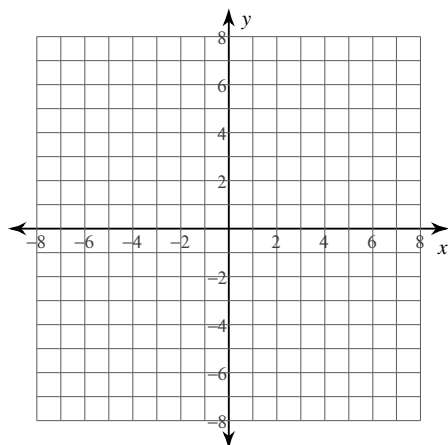
1) $y = -x - 4$



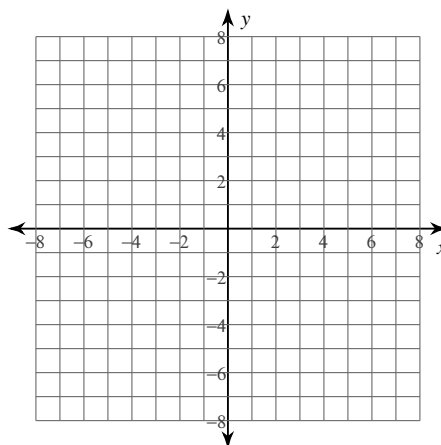
2) $y = \frac{3}{4}x + 3$



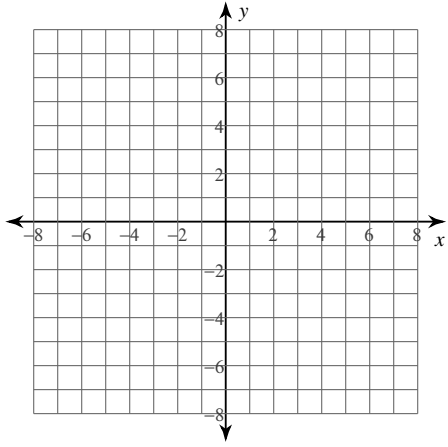
3) $f(x) = x^2 - 4x + 1$



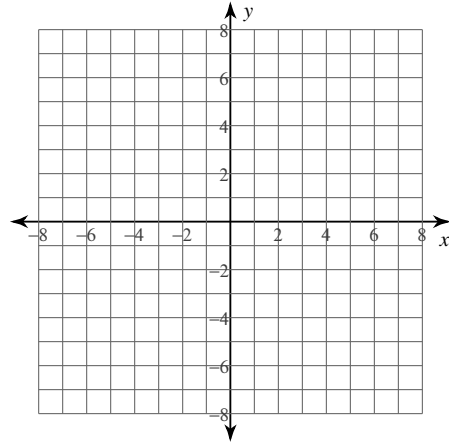
4) $f(x) = -x^3 + 3x^2 + 1$



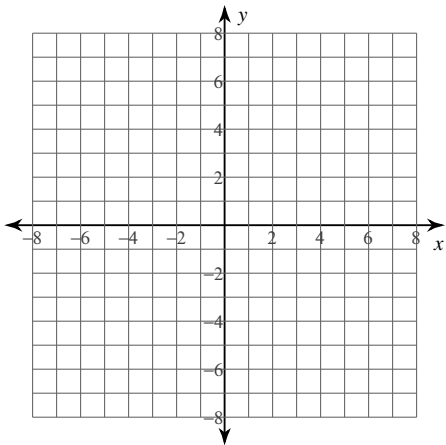
5) $f(x) = -x^4 + x^3 + 2x^2 + 3$



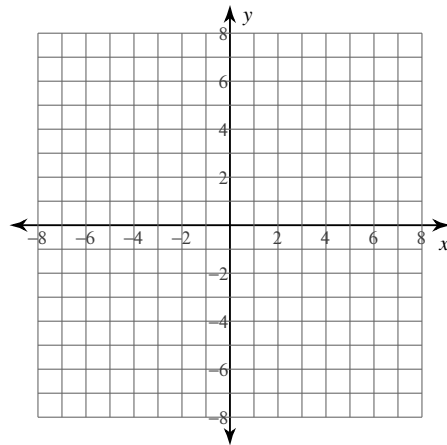
6) $f(x) = -x^5 + 2x^3 - x - 4$



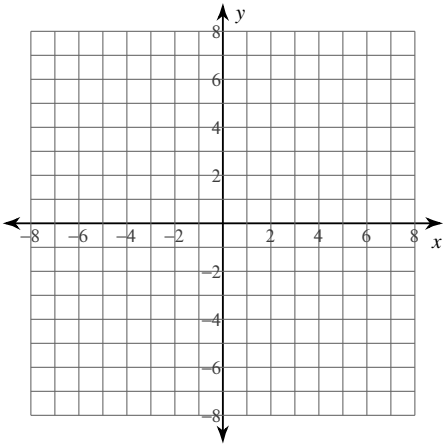
7) $y = \sqrt{x} + 3$



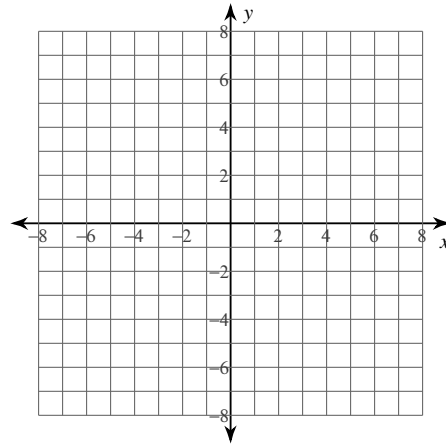
8) $y = \sqrt{x-1} + 2$



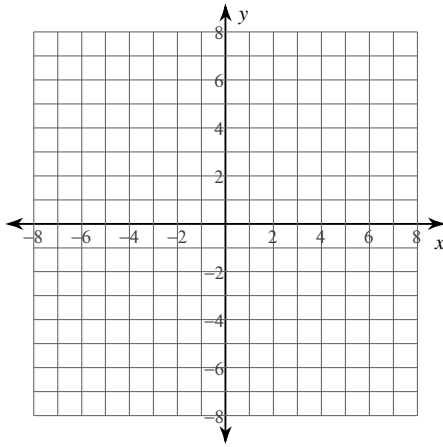
9) $f(x) = \frac{4}{x}$



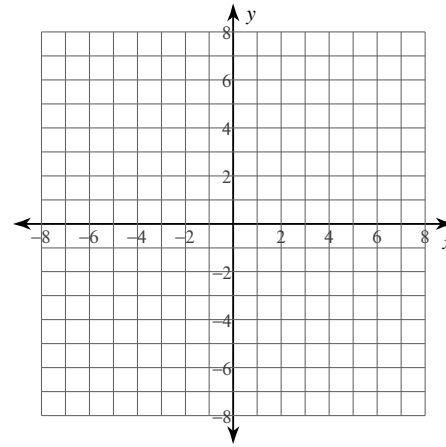
10) $f(x) = \frac{4}{x-2} + 1$



11) $f(x) = \log(x-1)$



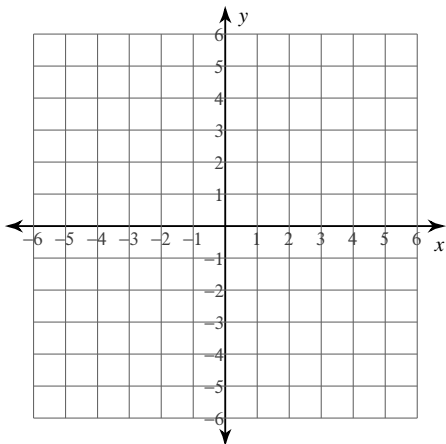
12) $f(x) = \log(x+2) + 5$



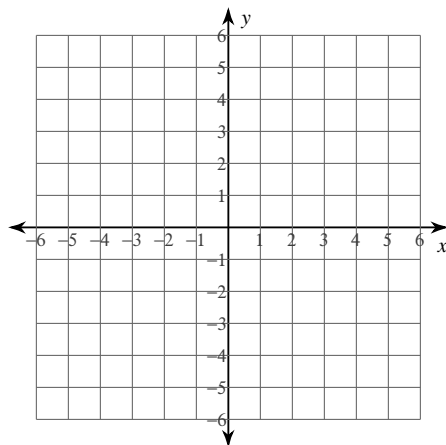
Function Inverses

Find the inverse of each function. Then graph the function and its inverse.

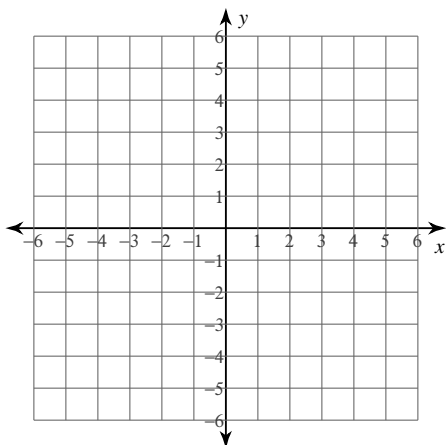
1) $f(x) = -\frac{4x}{3}$



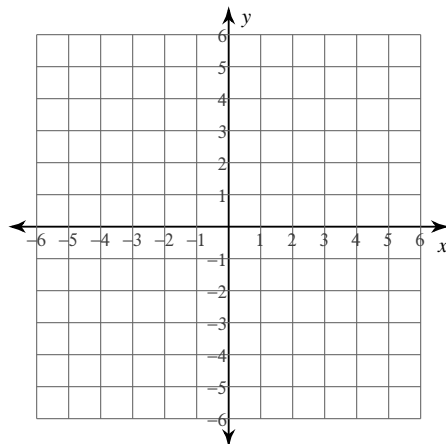
2) $f(x) = -5x + 5$



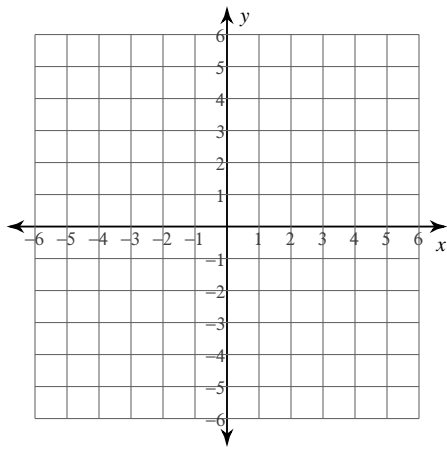
3) $f(x) = \frac{6 + 5x}{2}$



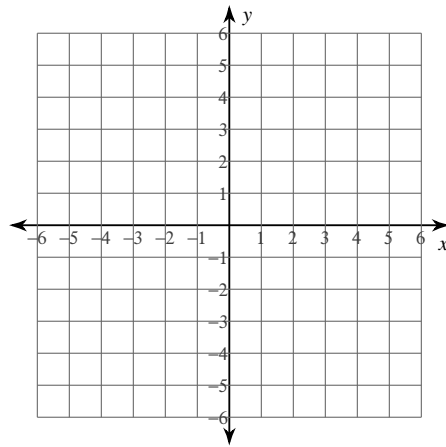
4) $f(x) = \frac{1}{3}x - \frac{2}{3}$



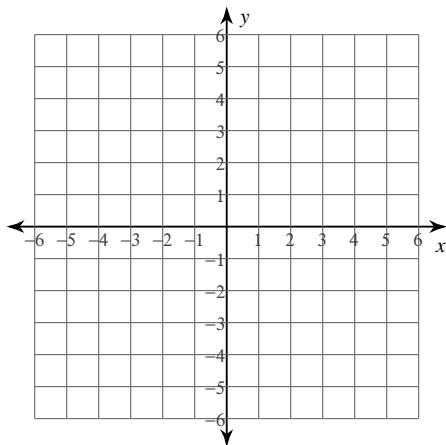
$$5) f(x) = (x + 1)^3$$



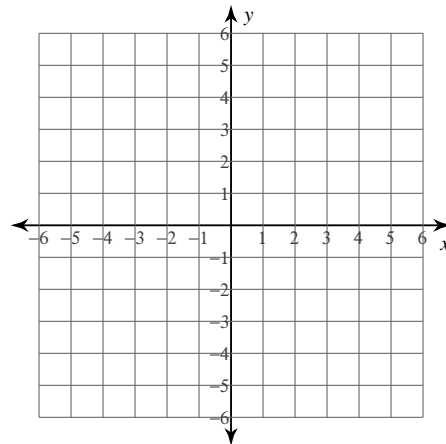
$$6) g(x) = 2x^5 + 3$$



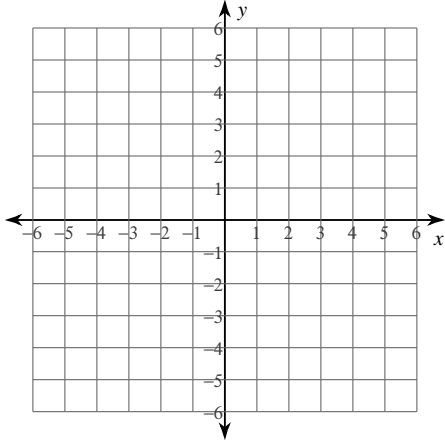
$$7) f(x) = \sqrt[3]{x - 1}$$



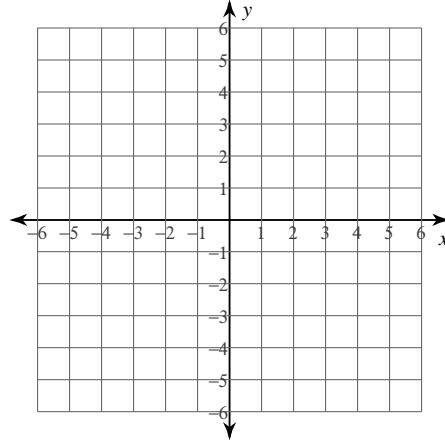
$$8) g(x) = \sqrt[5]{\frac{-x + 2}{2}}$$



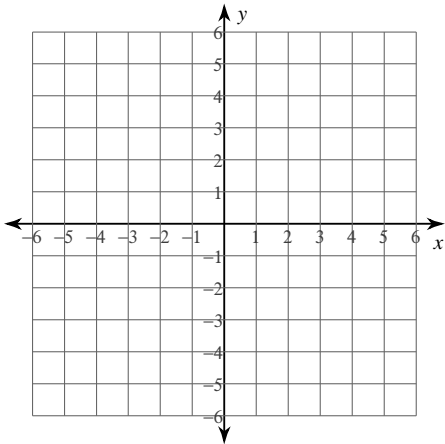
$$9) f(x) = \frac{1}{x+3}$$



$$10) g(x) = \frac{2}{x} + 2$$



$$11) f(x) = \frac{1}{x-1} + 1$$



$$12) f(x) = \frac{4}{-x-1} - 2$$

