

## Function Inverses

State if the given functions are inverses.

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

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

$$2) \quad g(n) = \frac{-12 - 2n}{3}$$

$$f(n) = \frac{-5 + 6n}{5}$$

$$3) \quad f(n) = \frac{-16 + n}{4}$$

$$g(n) = 4n + 16$$

$$4) \quad f(x) = -\frac{4}{7}x - \frac{16}{7}$$

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

$$5) \quad f(n) = -(n + 1)^3$$

$$g(n) = 3 + n^3$$

$$6) \quad f(n) = 2(n - 2)^3$$

$$g(n) = \frac{4 + \sqrt[3]{4n}}{2}$$

$$7) \quad f(x) = \frac{4}{-x - 2} + 2$$

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

$$8) \quad g(x) = -\frac{2}{x} - 1$$

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

Find the inverse of each function.

$$9) \quad h(x) = \sqrt[3]{x} - 3$$

$$10) \quad g(x) = \frac{1}{x} - 2$$

$$11) \quad h(x) = 2x^3 + 3$$

$$12) \quad g(x) = -4x + 1$$

$$13) g(x) = \frac{7x + 18}{2}$$

$$14) f(x) = x + 3$$

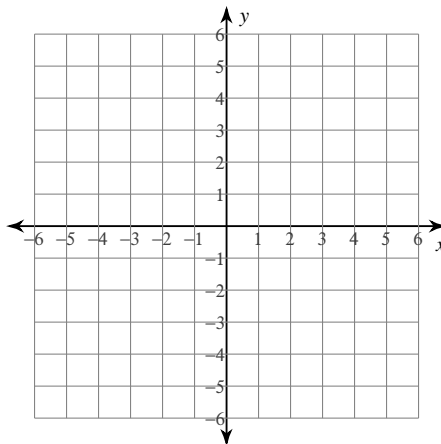
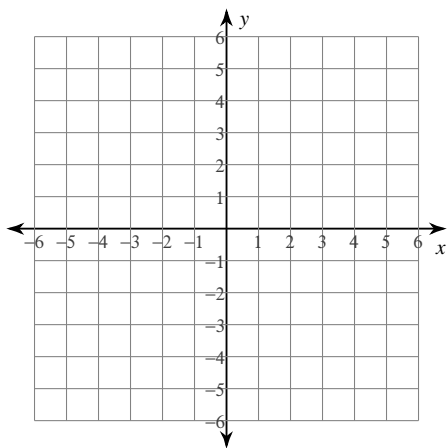
$$15) f(x) = -x + 3$$

$$16) f(x) = 4x$$

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

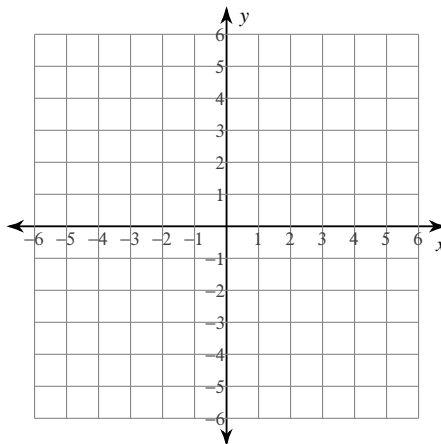
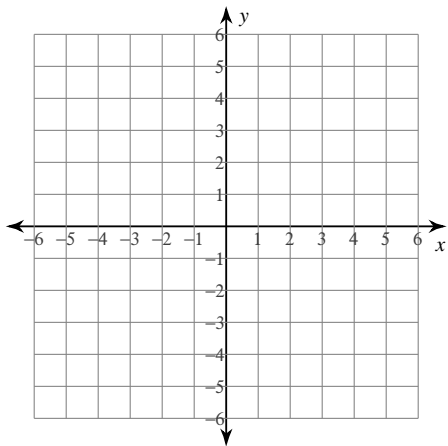
$$17) f(x) = -1 - \frac{1}{5}x$$

$$18) g(x) = \frac{1}{x - 1}$$



$$19) f(x) = -2x^3 + 1$$

$$20) g(x) = \frac{-x - 5}{3}$$



## Function Inverses

State if the given functions are inverses.

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

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

No

$$2) g(n) = \frac{-12 - 2n}{3}$$

$$f(n) = \frac{-5 + 6n}{5}$$

No

$$3) f(n) = \frac{-16 + n}{4}$$

$$g(n) = 4n + 16$$

Yes

$$4) f(x) = -\frac{4}{7}x - \frac{16}{7}$$

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

No

$$5) f(n) = -(n + 1)^3$$

$$g(n) = 3 + n^3$$

No

$$6) f(n) = 2(n - 2)^3$$

$$g(n) = \frac{4 + \sqrt[3]{4n}}{2}$$

Yes

$$7) f(x) = \frac{4}{-x - 2} + 2$$

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

No

$$8) g(x) = -\frac{2}{x} - 1$$

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

Yes

Find the inverse of each function.

$$9) h(x) = \sqrt[3]{x} - 3$$

$$h^{-1}(x) = (x + 3)^3$$

$$10) g(x) = \frac{1}{x} - 2$$

$$g^{-1}(x) = \frac{1}{x + 2}$$

$$11) h(x) = 2x^3 + 3$$

$$h^{-1}(x) = \sqrt[3]{\frac{x - 3}{2}}$$

$$12) g(x) = -4x + 1$$

$$g^{-1}(x) = -\frac{1}{4}x + \frac{1}{4}$$

$$13) g(x) = \frac{7x + 18}{2}$$

$$g^{-1}(x) = \frac{2x - 18}{7}$$

$$14) f(x) = x + 3$$

$$f^{-1}(x) = x - 3$$

$$15) f(x) = -x + 3$$

$$f^{-1}(x) = -x + 3$$

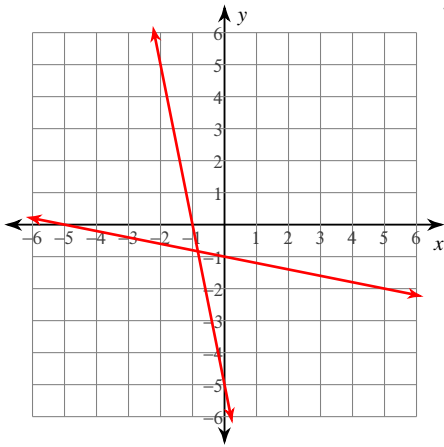
$$16) f(x) = 4x$$

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

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

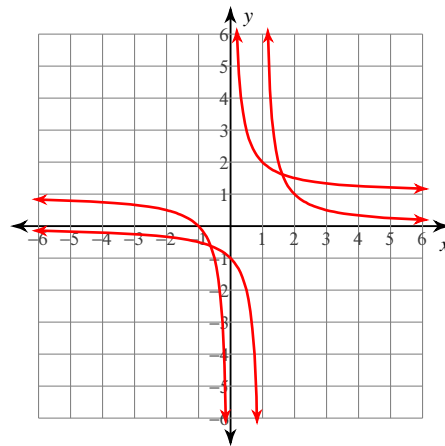
$$17) f(x) = -1 - \frac{1}{5}x$$

$$f^{-1}(x) = -5x - 5$$



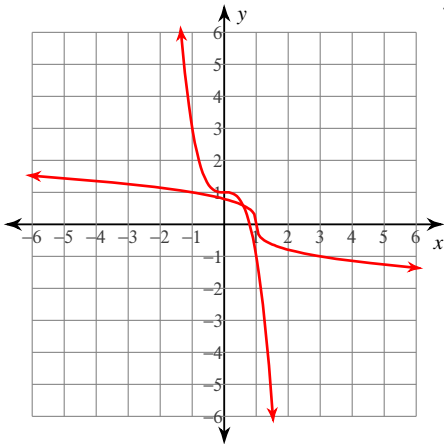
$$18) g(x) = \frac{1}{x-1}$$

$$g^{-1}(x) = \frac{1}{x} + 1$$



$$19) f(x) = -2x^3 + 1$$

$$f^{-1}(x) = \sqrt[3]{\frac{-x+1}{2}}$$



$$20) g(x) = \frac{-x-5}{3}$$

$$g^{-1}(x) = -3x - 5$$

