

Inverses of functions

Date _____ Period _____

Find the inverse of each function.

1) $h(x) = -3 - 2x^5$

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

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

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

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

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

7) $g(x) = \sqrt[3]{x} - 2$

8) $f(n) = \frac{6 - \sqrt[3]{4n}}{2}$

9) $g(n) = (n-1)^3 + 2$

10) $f(x) = -2x$

11) $g(n) = \frac{4}{n-3} - 2$

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

State if the given functions are inverses.

$$13) \begin{aligned} f(x) &= -\frac{1}{6}x - \frac{2}{3} \\ g(x) &= -6x - 4 \end{aligned}$$

$$14) \begin{aligned} f(x) &= \frac{-5 + 3x}{5} \\ g(x) &= 3x - 2 \end{aligned}$$

$$15) \begin{aligned} f(x) &= -5x - 5 \\ g(x) &= \frac{8x - 12}{5} \end{aligned}$$

$$16) \begin{aligned} f(x) &= \frac{-20 + x}{5} \\ g(x) &= 5x + 20 \end{aligned}$$

$$17) \begin{aligned} f(x) &= -1 + \frac{5}{4}x \\ g(x) &= 3 - \frac{8}{3}x \end{aligned}$$

$$18) \begin{aligned} f(x) &= \frac{4}{3}x + \frac{4}{3} \\ g(x) &= -1 + \frac{3}{4}x \end{aligned}$$

$$19) \begin{aligned} h(x) &= -x + 5 \\ f(x) &= -\frac{2}{9}x + \frac{8}{9} \end{aligned}$$

$$20) \begin{aligned} f(x) &= 5x - 2 \\ g(x) &= \frac{1}{5}x + \frac{2}{5} \end{aligned}$$

$$21) \begin{aligned} f(x) &= \frac{12 - 7x}{4} \\ g(x) &= \frac{-4x + 12}{7} \end{aligned}$$

$$22) \begin{aligned} g(x) &= -x + 4 \\ f(x) &= -2x + 3 \end{aligned}$$

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Find the inverse of each function.

1) $h(x) = -3 - 2x^5$

$$h^{-1}(x) = \sqrt[5]{\frac{-x-3}{2}}$$

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

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

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

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

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

$$g^{-1}(n) = -3n + 9$$

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

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

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

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

7) $g(x) = \sqrt[3]{x} - 2$

$$g^{-1}(x) = (x+2)^3$$

8) $f(n) = \frac{6 - \sqrt[3]{4n}}{2}$

$$f^{-1}(n) = -2(n-3)^3$$

9) $g(n) = (n-1)^3 + 2$

$$g^{-1}(n) = \sqrt[3]{n-2} + 1$$

10) $f(x) = -2x$

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

11) $g(n) = \frac{4}{n-3} - 2$

$$g^{-1}(n) = \frac{4}{n+2} + 3$$

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

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

State if the given functions are inverses.

$$13) \begin{aligned} f(x) &= -\frac{1}{6}x - \frac{2}{3} \\ g(x) &= -6x - 4 \end{aligned}$$

Yes

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No

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$$18) \begin{aligned} f(x) &= \frac{4}{3}x + \frac{4}{3} \\ g(x) &= -1 + \frac{3}{4}x \end{aligned}$$

Yes

$$19) \begin{aligned} h(x) &= -x + 5 \\ f(x) &= -\frac{2}{9}x + \frac{8}{9} \end{aligned}$$

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