

Inverses of Non-Linear Functions

Date _____

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Find the inverse of each power function.

1) $g(x) = (x - 2)^3 - 1$

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

3) $g(x) = (x - 1)^3 + 3$

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

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

6) $h(x) = -2(x + 2)^2$

Find the inverse of each root function.

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

8) $g(x) = \sqrt[5]{\frac{x - 3}{2}}$

9) $g(x) = \sqrt{x + 3}$

10) $f(x) = \sqrt[4]{x + 1}$

$$11) f(x) = \sqrt{\frac{x+2}{2}}$$

$$12) g(x) = \sqrt[3]{x-2} + 1$$

Find the inverse of each function.

$$13) f(x) = \frac{3}{x+2} - 2$$

$$14) f(x) = \frac{1}{x-1} - 3$$

$$15) g(x) = \frac{3}{-x-3}$$

$$16) g(x) = -\frac{1}{x-1} - 2$$

$$17) g(x) = -\frac{2}{x-1} - 2$$

$$18) g(x) = \frac{1}{x+3} - 2$$

$$19) g(x) = -\frac{3}{-x-3} - 1$$

$$20) f(x) = -\frac{3}{x} + 2$$

Inverses of Non-Linear Functions

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Find the inverse of each power function.

1) $g(x) = (x - 2)^3 - 1$

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

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

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

3) $g(x) = (x - 1)^3 + 3$

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

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

$$f^{-1}(x) = \sqrt[4]{x + 1} + 1$$

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

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

6) $h(x) = -2(x + 2)^2$

$$h^{-1}(x) = \frac{-4 - \sqrt{4x}}{2}$$

Find the inverse of each root function.

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

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

8) $g(x) = \sqrt[5]{\frac{x - 3}{2}}$

$$g^{-1}(x) = 3 + 2x^5$$

9) $g(x) = \sqrt{x} + 3$

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

10) $f(x) = \sqrt[4]{x + 1}$

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

$$11) f(x) = \sqrt{\frac{x+2}{2}}$$

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

$$12) g(x) = \sqrt[3]{x-2} + 1$$

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

Find the inverse of each function.

$$13) f(x) = \frac{3}{x+2} - 2$$

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