

Cubic and Cube Root as Inverses

Name: _____

Find the inverse of each function.

1) $y = 3\sqrt[3]{x} + 9$

2) $y = -\frac{1}{2}x^3 + 6$

3) $f(x) = \frac{(x+4)^3}{5} - 1$

4) $g(x) = \sqrt[3]{9-x} + 3$

Prove the following functions are inverses using composition.

5) $y = \frac{1}{3}x^3 - 12$ and $y = \sqrt[3]{3x + 36}$

6) $f(x) = 3\sqrt[3]{5 - 2x} + 8$ and $g(x) = \frac{-1}{2}\left(\frac{x-8}{3}\right)^3 + 2.5$

Solve each equation for the given variable.

7) Solve $m = 2\sqrt[3]{x + h} - b$ for h .

8) Solve $2y - t = \frac{(h-r)^3}{k}$ for r .