



Name _____ Date _____ Period _____

RADICAL INVERSE WORKSHEET

The procedure for finding the inverse of a linear function:

- 1) Substitute y for $f(x)$
- 2) Switch the “ x ” and the “ y ” in the equation
- 3) Solve for y . You have now solved for the inverse of the function.

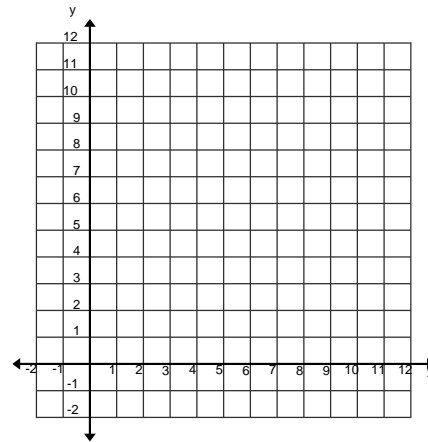
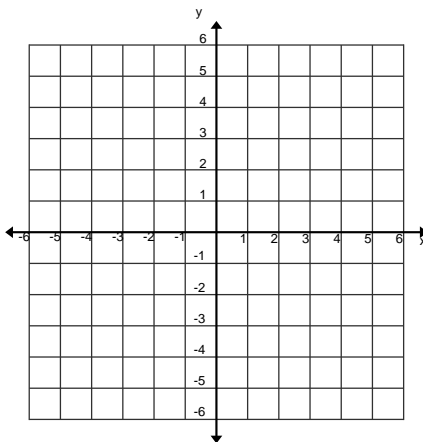
Find the inverse of each function.

1) $h(x) = \sqrt[3]{x} - 3$ 2) $g(x) = 2x^2 - 5$ where $x \geq 0$ 3) $f(x) = 4x^3 + 1$

4) $g(x) = \sqrt{2x - 4} + 5$ 5) $f(x) = 6x^2 + 1$ where $x \leq 0$ 6) $f(x) = \frac{1}{4}x^3 - 2$

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

7) $f(x) = -2x^3 + 1$ 8) $g(x) = \sqrt{x - 3} + 4$



9) Near the end of a star’s life, the star will eject gas, forming a planetary nebula. The Ring Nebula is an example of a planetary nebula. The volume V (in cubic kilometers) of this nebula can be modeled by $V = (9.01 \times 10^{26})t^3$ where t is the age (in years) of the nebula. Write the inverse model that gives the age of the nebula as a function of its volume. Then, determine the approximate age of the Ring Nebula given that its volume is about 1.5×10^{38} cubic kilometers.