

Unit: Radicals, Powers and Roots Inverse Function

Role model Video;LCD Light and Holography - Michael Escuti

Keywords: Inverse Functions, Radicals, and Roots

Common Core Standards:

N.RN.1

N.RN.2

N.RN.3

A.REI.2

A.REI.11

F.IF.2

F.IF.7

F.BF.4

Synopsis: The Student will need to analyze the behavior of Inverse Functions. The video of the LCD light and be used as a introduction of inverse functions. The student will need to use fantom to predict the behavior of function and inverse function.

Notes: Students should have worked with Fathom some and understand the basic working of the programs and its menus.

The Project of finding the Radical and Inverse function

7.4 Inverse Function Homework

Name:

Graph each function. Then switch the x and y coordinates and graph its inverse.

1. $f(x) = 2x - 4$

2. $f(x) = \sqrt[5]{2x} - 2$

Find an equation for the inverse relation. Assume any higher order functions include x values greater than zero.

3. $y = -2x + 5$

4. $y = 15x - 10$

5. $y = 12 - 9x$

6. $y = 1/2x + 6$

7. $y = 5x + 2$

8. $y = \frac{x - 12}{4}$

9. $y = x + 1/2$

10. $y = \frac{-x}{7}$

11. $y = x^7$

12. $y = x^3 + 2$

13. $y = (x - 4)^2$

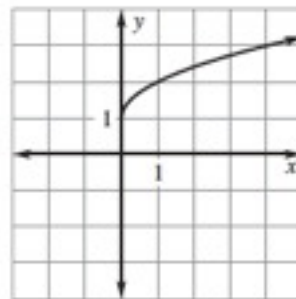
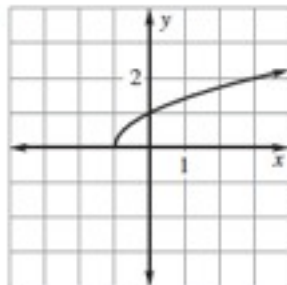
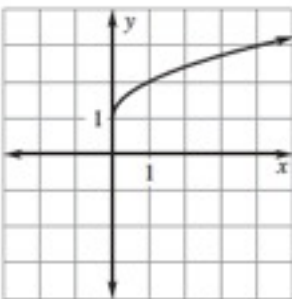
14. $y = 3/5x^3 - 9$

Match each function with its inverse.

15.

16.

17.



18. Dan works at a hardware store. The employee discount is determined by the formula $d = .15(c - 10)$. Use the inverse to find the cost of the item for which Dan received an \$18 discount.

a) Find the function that models cost as a function of the discount (solve for c).

b) Evaluate this function for $d = 18$

19. In bowling a handicap is a change in score to adjust for differences in player's abilities. You belong to a bowling league in which each bowler's handicap h is determined by his or her average a using this formula: $h = .9(200 - a)$. Find the inverse of the function (solve for a). Then find your average if your handicap is 27.

Verify the following are inverses by showing $f(g(x)) = g(f(x)) = x$

20. $f(x) = x + 7$
 $g(x) = x - 7$

21. $f(x) = 1/3x^2$
 $g(x) = (3x)^{1/2}$

Open Fathom. Drag a new table down. Add the new attributes: distance and height. Enter in the data for the equation you are working with. Drag down a new graph. Drop the distance attribute on the x-axis and the height attribute on the y-axis. You can use Type in the Function under the Graph menu to plot functions such as the horizontal line for a maximum height or the polynomial equation. To set up your Radical function, you will need to drag down one more sliders than the degree. Label them a , b , and c and then plot the function $ax^2 + bx + c$. The sliders should now control the function. Drag the sliders and analyze the graph from the characteristics note the domain and Range.