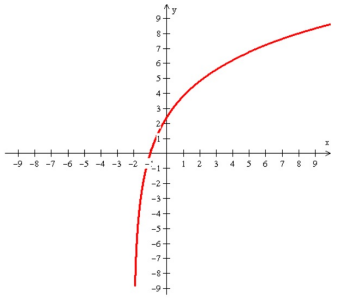
Bellwork Friday, March 7, 2014

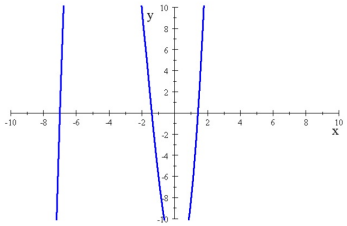
1. Is the inverse of each of the below a function?

a) $y = 8\log(x+2)$



Yes Passes horizontal line test

b) $f(x) = x^3 + 7x^2 - 2x - 14$



No Fails horizontal line test

2. Write the equation of the inverse of each.

a) $y = \dfrac{8(2x+7)^3 - 3}{5}$

$f^{-1}(x) = \dfrac{\sqrt[3]{\dfrac{5x+3}{8}} - 7}{2}$

b) $y = \dfrac{5}{y+2}$

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

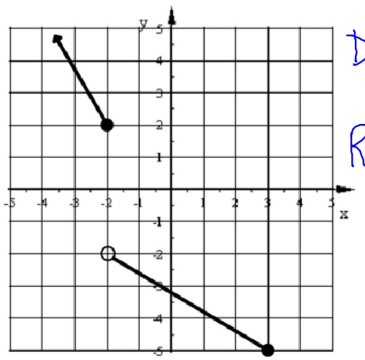
$(y+2)x = \dfrac{5}{y+2} \cdot (y+2)$

$\dfrac{x(y+2)}{x} = \dfrac{5}{x}$

$y+2 = \dfrac{5}{x}$

$y = \dfrac{5}{x} - 2$

3. The function $f(x)$ is shown below. Find the domain and range of the inverse.



Domain of $f(x)$ $x \le 3$

Range of $f(x)$

$-5 \le y < -2$

$y \ge 2$

Range of $f^{-1}(x)$ $y \le 3$

Domain of $f^{-1}(x)$

$-5 \le x < -2$

$x \ge 2$