

March 21, 2016

| | | | |
|---|-----|-------------------|--|
| $\begin{array}{c} 1 \\ -2 \\ -4 \\ 0 \end{array}$ | f | $\frac{4}{x} + 5$ | $\begin{array}{c} 9 \\ 7 \\ 4 \\ \text{und} \end{array}$ |
| Domain | | | Range |

Mar 21-11:00 AM

$f(x) = \frac{4}{x} + 5$
 ① $y = \frac{4}{x} + 5$
 ② $x = \frac{4}{y} + 5$ solve for y
 $\frac{4}{y} \cdot \frac{y}{y} = \frac{4}{y} + 5 \cdot \frac{y}{y}$
 $\frac{4}{y} + \frac{5y}{y} = \frac{4}{y} + 5$
 $\frac{4}{y} + \frac{5y}{y} = \frac{4}{y} + 5$
 $y = \frac{4}{x-5}$
 ③ $f^{-1}(x) = \frac{4}{x-5}$
 ④ a) find $(f \circ f^{-1})(x)$
 $f(f^{-1}(x)) = \frac{4}{(f^{-1}(x))} + 5$
 $= \frac{4}{\frac{4}{x-5}} + 5$
 $= \frac{4}{\frac{4}{x-5}} + 5$
 $= \frac{4}{1} + 5$
 $= 4 + 5$
 $= x$

Mar 21-11:11 AM

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

Mar 21-11:24 AM

$f(x) = \frac{x^5 - 3}{2}$
 $y = \frac{x^5 - 3}{2}$
 $x = \frac{y^5 - 3}{2}$
 $2x = \frac{y^5 - 3}{1}$
 $\sqrt[5]{2x + 3} = y$
 $(2x + 3)^{1/5} = y$
 $f^{-1}(x) = (2x + 3)^{1/5}$

Mar 21-11:32 AM

① $(f \circ f^{-1})(x)$
 $\frac{1}{5} \cdot \frac{5}{1} = 1$
 $= \frac{(2x+3)^{1/5} \cdot 5}{5} - 3$
 $= \frac{(2x+3)^1 - 3}{5}$
 $= \frac{2x + 3 - 3}{5}$
 $= \frac{2x}{5}$
 $= x$

Mar 21-11:41 AM

$(f^{-1} \circ f)(x)$

Mar 21-11:45 AM

$$f(x) = \sqrt{2x-1}$$

Mar 21-11:51 AM