

Inverse of a function quiz

Sunday, November 10, 2013

10:17 PM

$$\textcircled{1} \quad f(x) = 3x + 2$$

$$\text{a) } f(4) = 3 \times 4 + 2 = 12 + 2 = 14$$

$$\text{b) } f^{-1}(14) = 4$$

$$\text{c) } f^{-1}(y) = \frac{y-2}{3} \quad \text{because:}$$

$$y = 3x + 2, \quad y - 2 = 3x$$

$$\frac{y-2}{3} = x$$

$$\textcircled{2} \quad f(x) = 5(x+3)^2$$

$$\text{a) } f(2) = 5(2+3)^2 = 5 \times 5^2 = 5 \times 25 = 125$$

$$\text{b) } f^{-1}(125) = 2$$

$$\text{c) } f^{-1}(y) = \pm\sqrt{\frac{y}{5}} - 3$$

$$y = 5(x+3)^2$$

$$\frac{y}{5} = (x+3)^2$$

$$\pm\sqrt{\frac{y}{5}} = x+3$$

$$\pm\sqrt{\frac{y}{5}} - 3 = x$$