Bellwork Alg 2 Wednesday, December 19, 2018

1. Write the equation of the inverse relation for each.

a) $f(x) = \dfrac{7(x-9)^6 + 1}{8}$

b) $y = \dfrac{\sqrt[3]{4x+3} - 2}{11}$

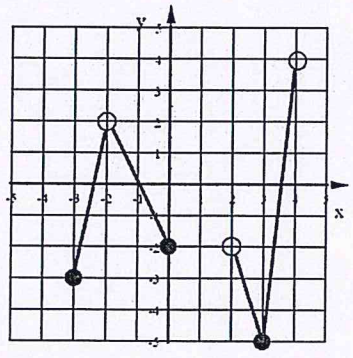
2. Is the inverse of each a function?

a) $f(x) = 5\sqrt{x+2} - 9$

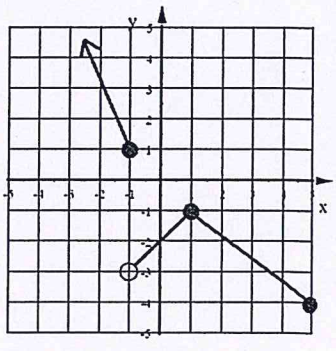
b) $y = \dfrac{x-4}{x^2+x-6}$

3. State the Domain and Range of the inverse for each of the graphs shown.

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



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



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ANSWERS

1. Write the equation of the inverse relation for each.

a) $f(x) = \dfrac{7(x-9)^6+1}{8}$

$x = \dfrac{7(y-9)^6+1}{8}$

$y = \pm\sqrt[6]{\dfrac{8x-1}{7}} + 9$

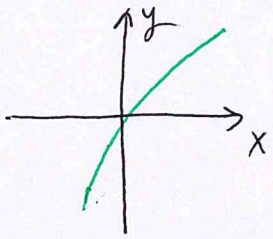
b) $y = \dfrac{\sqrt[5]{4x+3}-2}{11}$

$x = \dfrac{\sqrt[5]{4y+3}-2}{11}$

$y = \dfrac{(11x+2)^5 - 3}{4}$

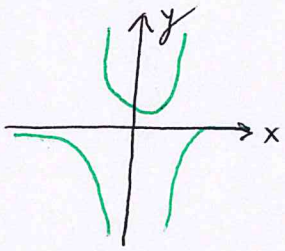
2. Is the inverse of each a function?

a) $f(x) = 5\sqrt{x+2} - 9$



YES, INVERSE IS A FUNCTION

b) $y = \dfrac{x-4}{x^2+x-6}$



NO, INVERSE IS NOT A FUNCTION

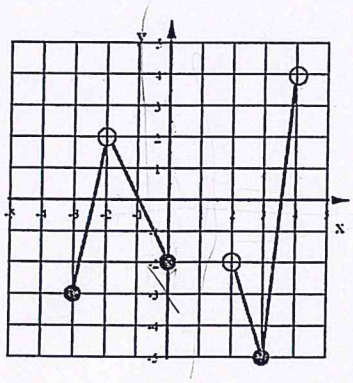
3. State the Domain and Range of the inverse for each of the graphs shown.

a) Domain of $f^{-1}(x)$: $[-5, 4)$

Range of $f^{-1}(x)$: $[-3,-2) \cup (-2,0] \cup (2,4)$

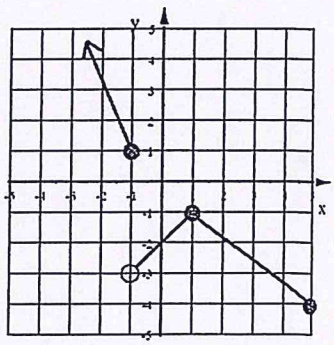
b) Domain of $f^{-1}(x)$: $[-4,-1] \cup [1,\infty)$

Range of $f^{-1}(x)$: $(-\infty, 5]$



Domain of original: $[-3,-2) \cup (-2,0] \cup (2,4)$

Range of original: $[-5, 4)$



Domain of original: $(-\infty, 5]$

Range of original: $[-4,-1] \cup [1,\infty)$