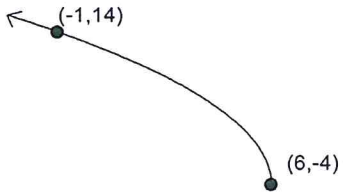
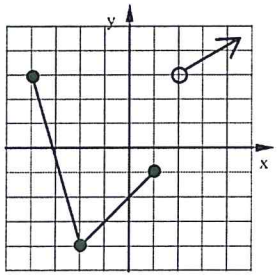
# Bellwork Alg 2B Monday, October 16, 2017

1. Write the equation of this function:




2. State the domain and range of the inverse relation of the graph shown below.




3. Write the equation of the inverse relation.

$$y = \frac{3(3x-8)^4 + 6}{5} - 1$$

$f^{-1} =$

4. Is the inverse relation a function?

$$y = \frac{x^2 + 6x - 7}{x^2 - 9}$$

5. State the Domain and Range of this function.

$$y = -5\sqrt{-(x-1)} - 7$$

6. Rationalize the denominator and simplify.

$$\frac{30x^6y}{\sqrt[4]{64x^{13}y^7}}$$

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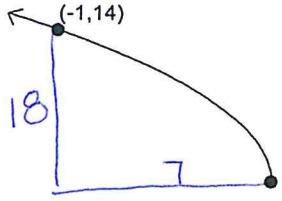
Answers

1. Write the equation of this function:




parent function

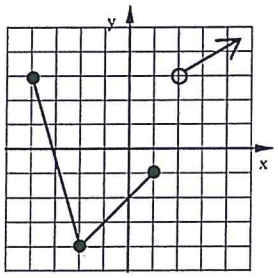

Graph is Backwards

6 RT 4 DOWN

$a = \frac{18}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{18\sqrt{7}}{7}$

$y = \frac{18\sqrt{7}}{7}\sqrt{-(x-6)} - 4$

2. State the domain and range of the inverse relation of the graph shown below.




ORIGINAL Function

Domain: $[-4,1] \cup (2,\infty)$

Range: $[-4,\infty)$

INVERSE:

Domain: $[-4,\infty) \rightarrow x \geq -4$

Range: $[-4,1], (2,\infty)$

↳ $-4 \leq y \leq 1$, $y > 2$

3. Write the equation of the inverse relation.

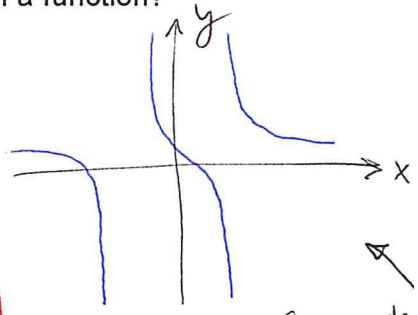
$y = \frac{3(3x-8)^4 + 6}{5} - 1$

$f^{-1} =$

$f^{-1} = \frac{\pm\sqrt[4]{\frac{5(x+1)-6}{3}} + 8}{3}$

4. Is the inverse relation a function?

$y = \frac{x^2 + 6x - 7}{x^2 - 9}$



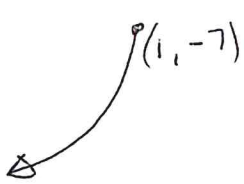

No, inverse is NOT a function

original graph fails the Horizontal Line test

5. State the Domain and Range of this function.

$y = -5\sqrt{-(x-1)} - 7$

1 RT 7 DOWN upside down & Backwards




Domain:

$(-\infty, 1] \rightarrow x \leq 1$

Range:

$(-\infty, -7] \rightarrow y \leq -7$

6. Rationalize the denominator and simplify.

$\frac{30x^6y}{\sqrt[4]{64x^{13}y^7}} \cdot \frac{\sqrt[4]{2^2x^3y}}{\sqrt[4]{2^2x^3y}} = \frac{30x^6y\sqrt[4]{4x^3y}}{\sqrt[4]{2^8x^{16}y^8}}$

$64 = 2^6$

$= \frac{30x^6y\sqrt[4]{4x^3y}}{2^2x^4y^2}$

$= \frac{15x^2\sqrt[4]{4x^3y}}{2y}$