Algebra 2 Bellwork Monday, May 11, 2015

ANSWERS

1. Simplify each. Use Absolute Value symbols where necessary.

$2^4 = 16$
$3^4 = 81$
$4^4 = 256$

a) $\sqrt[4]{162a^7b^{24}c^{31}}$ $81 \cdot 2$ $= 3|a|b^6|c^7|\sqrt[4]{2a^3c^3}$

b) $\sqrt[3]{20cd^4} \cdot \sqrt[3]{28c^7d^9} \cdot \sqrt[3]{12c^2d^8}$ $4\cdot5$ $4\cdot7$ $4\cdot3$

$= \sqrt[3]{4^3 \cdot 5 \cdot 7 \cdot 3\, c^{10} d^{21}} = 4c^3 d^7 \sqrt[3]{105c}$

2. Rationalize the denominator.

a) $\dfrac{12g^4h}{\sqrt[5]{48g^8h^{17}}} \cdot \dfrac{\sqrt[5]{2\cdot3^4g^2h^3}}{\sqrt[5]{2\cdot3^4g^2h^3}}$ $16\cdot3$ $2^4\cdot3$

$\sqrt[5]{2^5 3^5 g^{10} h^{20}}$

$\dfrac{12g^4h\sqrt[5]{2\cdot3^4g^2h^3}}{2\cdot3\,g^2h^4} = \dfrac{2g^2\sqrt[5]{2\cdot3^4g^2h^3}}{h^3}$

b) $\dfrac{\sqrt{3}-8}{\sqrt{6}+\sqrt{2}} \cdot \dfrac{\sqrt{6}-\sqrt{2}}{\sqrt{6}-\sqrt{2}} = \dfrac{-9\sqrt{6}-5\sqrt{2}}{4}$

3. Solve each.

a) $\sqrt{46-9x}+6=x$ NO SOL

$(\sqrt{46-9x})^2 = (x-6)^2$

$46-9x = x^2-12x+36$

$0 = x^2-3x-10$

$0 = (x-5)(x+2)$

$x = 5, -2$

b) $2(3x-1)^{\frac{3}{5}} - 9 = 119$

$((3x-1)^{3/5})^{5/3} = (64)^{5/3}$

$3x-1 = 1024$

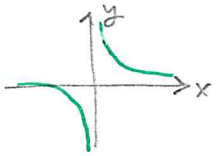
$x = \dfrac{1025}{3}$

4. Write the equation of the inverse relation: $y = 9\left(\dfrac{\sqrt{2x-7}+3}{8}\right)^5 + 5$

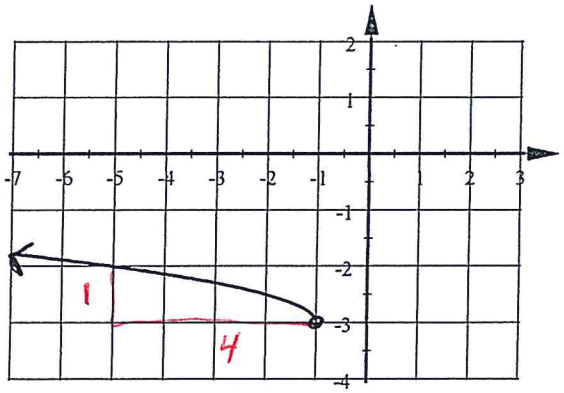
$f^{-1} = \left(8\sqrt[5]{\dfrac{x-5}{9}} - 3\right)^2 + 7$

5. Is the inverse relation a function? $y = \dfrac{3+x}{x-1}$

YES



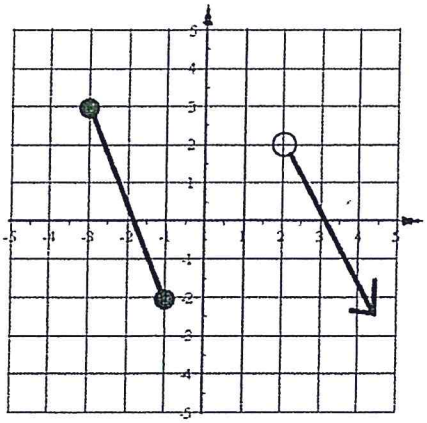
6. Write the equation of this square root function.



1 left, 3 down, backwards, 1/2 as tall

$y = \frac{1}{2}\sqrt{-(x+1)} - 3$

7. state the Domain and Range of the inverse relation.



ORIGINAL

Domain

$-3 \le x \le -1, \quad x > 2$

Range

$y \le 3$

INVERSE

Domain $x \le 3$

Range $-3 \le y \le -$

$y > 2$