NAME:_____ Math _____, Period _____

Mr. Rogove Date: 3/4

Learning Objective: We will solve equations involving square roots and cube roots. (G8M7L3)

Concept Development:

Find a Rule Part 1			Find a Rule Part 2	
1	1		1	1
2	4		2	8
3	9		3	27
9	81		5	125
11	121		6	216
15	225		11	1331
7	49		4	64
10	100		10	1000
12	144		7	343
13	169		14	2,744
m	m^2		p	p^3
$\sqrt{n}$	n		$\sqrt[3]{q}$	q

You take the 1st # & square it!

3 = index, $\sqrt{}$ = radical, q = radicand

Take the 1st number & cube it.

Cube Roots: The cube root of a number, x, is the number, y which satisfy the equation $x = y^3$. The notation we use is as follows: $\sqrt[3]{x} = y$

Example: $8 = 2^3$ and $\sqrt[3]{8} = 2$

The properties of equality extend to square roots and cube roots.

Example: If $x^2 = 36$, then $\sqrt{x^2} = \sqrt{36}$

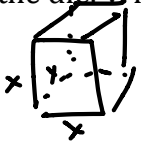
NAME:_____ Math _____, Period _____

Mr. Rogove Date:_____

Guided Practice:

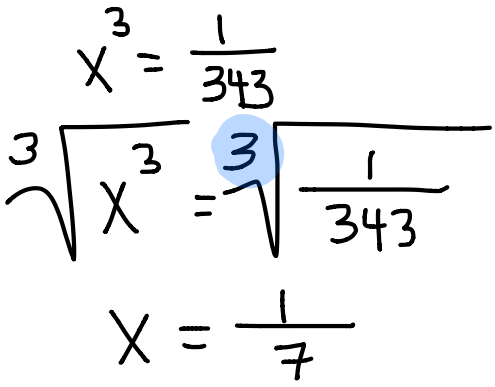
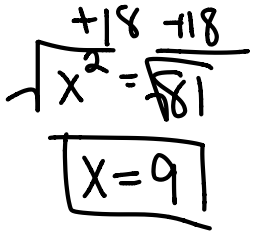
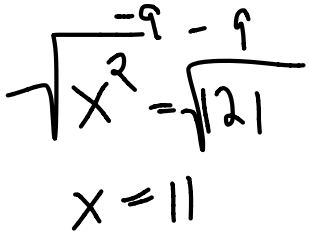
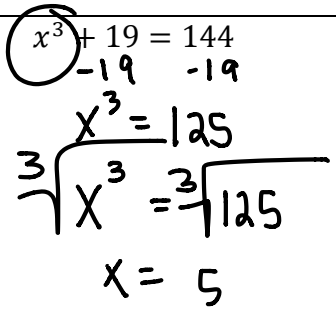
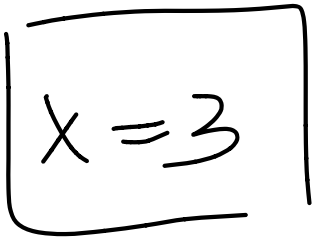
Steps for Solving Equations With Square Roots and Cube Roots

1. If necessary, isolate the term that is squared or cubed.
2. Take the square root or cube root of both sides of the equation and find the positive value that makes the equation true.
3. Check your solution.

$x^2 = 576$ $\sqrt{x^2} = \sqrt{576}$ $x = 24$ $24^2 = 576$	A square shaped strawberry patch has an exact area of 256 square ~~acres~~ miles. What are the dimensions of the patch? Write and solve an equation.  256 x 16x16 miles miles $x^2 = 256$ $\sqrt{x^2} = \sqrt{256}$ $x = 16$
An oversized die has a volume of 64 cubic millimeters. Find the dimensions of the die. Write and solve an equation.  $x^3 = 64$ $\sqrt[3]{x^3} = \sqrt[3]{64}$ 4 millimeters on each side	$x^3 = 216$ $\sqrt[3]{x^3} = \sqrt[3]{216}$ $x = 6$
$x^2 = 361^{-1}$ $x^2 = \frac{1}{361}$ $\sqrt{x^2} = \sqrt{\frac{1}{361}}$ $x = \frac{1}{19}$	$x^2 = 441^{-1}$ $x^2 = \frac{1}{441}$ $\sqrt{x^2} = \sqrt{\frac{1}{441}}$ $x = \frac{1}{21}$

NAME:_____ Math _____, Period _____

Mr. Rogove Date:_____

$x^3 = 343^{-1}$ 	$x^3 = 1000^{-1}$
$x^2 - 18 = 63$ 	$x^2 + 9 = 130$ 
$x^3 + 19 = 144$ 	$x^3 - 54 = -27$ 

NAME:_____ Math _____, Period _____

Mr. Rogove Date:_____

Independent Practice:

N/A

Activating Prior Knowledge:

Simplify:	Simplify:
$2^{-3} =$	$4^{-2} =$

Closure:

Is 6 a solution for the following equation?

$$x^2 = 5x + 4$$

Notes:

Homework could be Khan Cube Roots, This aligns with lesson 3. Can also give PoW quilts for homework.