NAME:	Math	_, Period	

Mr. Rogove Date:_____

LEARNING OBJECTIVE: We will solve equations involving square roots and cube roots. (G8M7L3)

CONCEPT DEVELOPMENT:

Find a Ru		Find a Ru	ıle 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	00)	10	100 0
12	144	7	343
13	169	14	2,744
m	m ²	р	32
75	n	3 8	q

<u>Cube Roots</u>: 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 $\sqrt{x^2} = \sqrt{36}$

GUIDED PRACTICE:

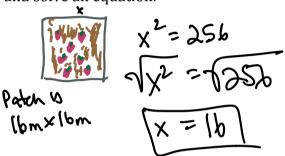
Steps for Solving Equations With Square Roots and Cube Roots

- 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.

$$x^{2} = 576$$

$$\sqrt{x^{2}} = \sqrt{576}$$

$$x = 24$$



An oversized die has a volume of 64 cubic millimeters. Find the dimensions of the die. Write and solve an equation.

$$x^{3} = 64$$
 $x^{3} = \sqrt{64}$
 $x = 4$

 $x^3 = 216$

$$x^2 = 361^{-1}$$
 $x^2 = \frac{1}{361}$

$$\sqrt{x^2} = \sqrt{\frac{1}{361}}$$

$$x^2 = 441^{-1}$$

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$x^3 = 343^{-1}$	$x^3 = 1000^{-1}$
x = 313	x = 1000
$x^2 - 18 = 63$	$x^2 + 9 = 130$
$x^3 + 19 = 144$	$x^3 - 54 = -27$

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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.