

Digits 3-1/3-2 Square + Cube Roots

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Goal: I will be able to **determine the square root and cube root of numbers.**

Tool Bag
Formulas, equations
Vocabulary, etc

Here's How - Notes & Examples

Inverse Operations


"Opposite" undo something

addition → subtraction
mult. plication → division
squares (7^2) → square root
cubes (5^3) → cube root

Perfect Squares Cubes	Base	Perfect Square	Perfect Cube
	1	$1 \times 1 = 1$	$1 \times 1 \times 1 = 1$
	2	$2 \times 2 = 4$	$2 \times 2 \times 2 = 8$
	3	9	$3 \times 3 \times 3 = 27$
	4	16	$4 \times 4 \times 4 = 64$
	5	25	$5 \times 5 \times 5 = 125$
	6	36	
	7	49	
	8	64	
	9	81	
	10	100	$10 \times 10 \times 10 = 1000$
	11	121	
	12	144	
	13	169	
	14	196	
	15	225	

Examples

$x^2 = 16$
 $\sqrt{x^2} = \sqrt{16}$
 $x = \sqrt{4^2}$
 $x = 4$
 $(-4)?$
 $(-4) \times (-4) = 16$
 $x = 4$ or -4

 Mind Blown

two ANSWERS?!?!?

b) $x^2 = \frac{16}{81}$

$\sqrt{x^2} = \sqrt{\frac{16}{81}}$ Undo the square

$x = \frac{\sqrt{16}}{\sqrt{81}}$

$x = \frac{4}{9}$ or $-\frac{4}{9}$

$x = \pm \frac{4}{9}$

Cube Root

$\sqrt[3]{\quad}$ means taking the cube root

Examples

a) $x^3 = 27$

$\sqrt[3]{x^3} = \sqrt[3]{27}$ Undo the cube by taking the cube root

$x = \sqrt[3]{3^3}$

$x = 3$

$(-3)?$
 $(-3)(-3)(-3) = -27$ NOT 27

b) $x^3 = -64$

$\sqrt[3]{x^3} = \sqrt[3]{-64}$

$x = \sqrt[3]{(-4)^3}$

$x = -4$

c) $x^2 = -36$

$\sqrt{x^2} = \sqrt{-36}$

$x = \sqrt{-36}$ CANNOT DO IT
Sorry NIKE