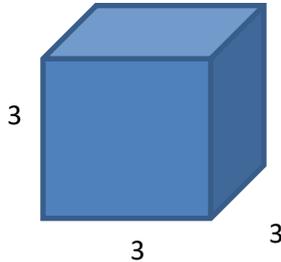


Name: _____

Cubes and Cube Roots: Note sheet

How to Cube a Number:

Example: What is 3 cubed?



$$= 3 \times 3 \times 3 = 27$$

Note: We write 3 cubed as 3^3

Some More Cubes:

1.) 4 cubed = $4^3 =$ ___ x ___ x ___ =

2.) 5 cubed = $5^3 =$ ___ x ___ x ___ =

Cube Roots

A **cube root** goes the other direction: (Now you are asking yourself what number can I multiply together three times to get the solution).

Ex: 3 cubed is 27, so the **CUBE ROOT** of 27 is 3 (Why? Because $3 \times 3 \times 3$ equals 27)

Examples:

1.) What is the cube root of 64? (hint: what number can I multiply together three times to get 64?) _____

2.) What is the cube root of 125? _____

3.) What is the cube root of 216? _____

The Cube Root Symbol

$\sqrt[3]{\quad}$ This is the special symbol that means "cube root", it is the radical symbol (also used for square roots) with a little three to mean cube root.

***You can use it like this: $\sqrt[3]{27} = 3$ (You would say "The cube root of 27 equals 3)**

Perfect Cubes:

-The cube of the whole numbers:

Perfect Cubes:	1	2	3	4	5	6	7	8	9	10
	1	8	27	64	125	216	343	512	729	1000

Cubes and Cube Roots Worksheet

Name: _____ Date: _____

1. What does it mean to “cube” a number?

2. Let’s practice, complete the following cubes.

a.) $1^3 =$

b.) $2^3 =$

c.) $3^3 =$

d.) $6^3 =$

e.) $8^3 =$

f.) $10^3 =$

The inverse of cubing a number is.....

3.) $\sqrt[3]{8} =$

4.) $\sqrt[3]{512} =$

5.) $\sqrt[3]{125} =$

6.) $\sqrt[3]{64} =$

Simplify each cube root:

7.) $\sqrt[3]{80}$

8.) $\sqrt[3]{48}$

9.) $\sqrt[3]{54}$

10.) $\sqrt[3]{270x^6y^5}$

11.) $\sqrt[3]{1000x^5}$

12.) $\sqrt[3]{72x^4}$

Challenge: Square roots and cube roots can be written as fractional exponents. If you need to multiply a square root and a cube root, you first change the exponents to fractions. What do you think you would do next?

$$\sqrt{x} \cdot \sqrt[3]{x} = x^{\frac{1}{2}} \cdot x^{\frac{1}{3}} =$$