**Unit 2 #3 RATIONAL EXPONENTS & LOGARITHMS**

**RATIONAL EXPONENTS**



Finding a root of a number is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ operation of raising a number to a power.



This symbol is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or the radical sign.

The expression under the radical sign is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_

defines the root to be taken.

SQUARE ROOTS Examples:

A square root of any **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** number has two 1. = 2. =

roots. One is \_\_\_\_\_\_\_\_\_\_\_ and the other is \_\_\_\_\_\_\_\_\_\_\_\_\_.

CUBED ROOTS Examples:

A cube root of any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ number is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 1. =

2. = 3. 4.

nth ROOTS Examples:

An nth root of any number \_\_\_\_\_\_\_\_ is a number whose 1. 34 = 2.

\_\_\_\_\_\_ power is *\_\_\_\_\_\_\_\_*.3. 24 = 4.

5. (-2)5 = 6.

RATIONAL EXPONENTS



The value of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ represents the power of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The value of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ represents the \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ of the expression.

Examples:

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**LOGARITHMS**

Definition of Logarithm: Suppose \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_, there is a number ‘p’ such that:

*If and only if*

**Example & Practice Problems** Write the Write the following exponential equations in logarithmic form.

1. 23 = 8 2. 42 = 16 3. 2-3 = 4. 72 = 49 5. 50 = 1 6. 10-2 =

**Example & Practice Problems** Write the following logarithmic equations in exponential form.

1. log3 81 = 4 2. log2 = -3 3. log10 100 = 2 4. log5 = -3 5. log27 3 =

**Example Problems:** Solve the following for the variable.

1. Solve for x: log6 x = 2 2. Evaluate. log3 27 = y