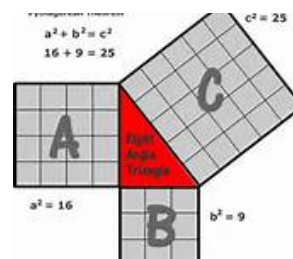


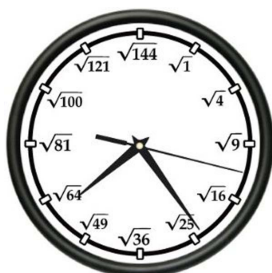


Math 8
Oct. 28, 2019

Before we start
Unit 1:



Square Roots & Pythagorean Theorem



2^3



Copy out

Exponents

★ Exponents are shorthand for repeated multiplication:
 Ex) $(5)(5) = 5^2$, $(5)(5)(5) = 5^3$.

★ The "exponent" stands for however many times the term is being multiplied.

Exponent

$$5^3 \quad (3 \text{ times}) \quad 5 \times 5 \times 5 = 125$$

★ The term that's being multiplied is called the "base".

$$\text{Base} \rightarrow 5^3$$

Given 4^3 , 4 is called the base and 3 is the exponent

★ Together, 4^3 is called a **power**.

Base
 exponent
 is a power



copy out

$$4^3 \text{ means } 4 \times 4 \times 4 = 64.$$

$4 \times 4 \times 4$ is the expanded form.

(repeated multiplication)

64 is the standard form.

(answer off calculator)

4^3 is the exponential form (or the power).

The base is what you are multiplying by, and the exponent tells you how many times to multiply it.

Exponential	Expanded	Standard
2^5 means	$2 \times 2 \times 2 \times 2 \times 2$	= <u>32</u>
3^3 means	$3 \times 3 \times 3$	= <u>27</u>
8^4 means	$8 \times 8 \times 8 \times 8$	= 4096

$$8 \times 8 = 64$$

$$8 \times 8 \times 8 = 512$$

$$8 \times 8 \times 8 \times 8 = 4096$$

Evaluate the following (Show all work)

$$\begin{array}{l}
 2 \times 2 \times 2 \times 2 \times 2 \\
 \underbrace{\hspace{2em}}_{4} \times 2 \times 2 \times 2 \\
 \underbrace{\hspace{2em}}_{8} \times 2 \times 2 \\
 \underbrace{\hspace{2em}}_{16} \times 2 \\
 \underbrace{\hspace{2em}}_{32}
 \end{array}$$

$$2^5 = 32$$

$$6 \times 6 \times 6 \times 6$$

base 6

exponent 4

power 6^4



Calculator Button



x^y

or

\wedge

or

y^x



So for $5^3 = 125$

$5 \times^y 3$

$5 \wedge 3$

$5 y^x 3$

$= 125$

5^3
 $5 \times 5 \times 5$
 $\underbrace{25}_{25} \times 5$
 125

x^2 is a special button that squares a #
 (means times the number by itself)

x^2

$$3^2 = 3 \times 3 = 9$$

$$8^4 = 4096$$

$$4^3 = \underbrace{4 \times 4}_{16} \times 4 = 64$$

$$\wedge$$

$$8 \times 8 \times 8 \times 8$$

$$13^4 = 28561$$

* same

Homework *

	Power	Base	Exponent	Exponential Form	Expanded Form	Standard Form
a)	7^3	7	3	7^3	$7 \times 7 \times 7$	343
b)		9	4			
c)				6^2		
d)					$4 \times 4 \times 4 \times 4 \times 4$	
e)	3^5					
f)		10	4			
g)	5^4					
h)	4^5					
i)					$8 \times 8 \times 8$	
j)				3^9		
k)		8	2			
l)					$5 \times 5 \times 5 \times 5 \times 5 \times 5$	
m)	3^3					
n)		11	2			
o)		6				1296
p)			5			32

Attachments

WS 2.3 Powers.doc