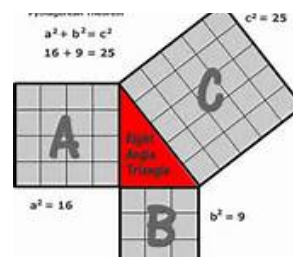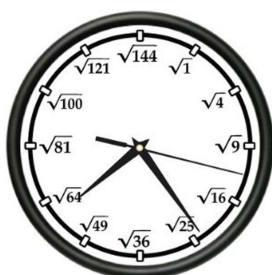Math 8
Oct. 25, 2018

Before we start
Unit 1:

Square Roots & Pythagorean Theorem

$$2^3$$

Exponents

⭐ **Exponents are shorthand for repeated multiplication:**

Ex) $(5) \times (5) = 5^2$, $(5) \cdot (5) \cdot (5) = 5^3$.

25   125

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

Exponent → 5^3

5^3 **(3 times)** $5 \times 5 \times 5 = 125$

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

Base → 5^3

Given 4^3, 4 is called the __base__ and 3 is the __exponent__

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

$4 \times 4 \times 4 = 64$

Power

exponent

8^3

base

4^3 **means 4 x 4 x 4 = 64.**

4 x 4 x 4 is the expanded form. (repeated X)

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	_____	= ___
___ means	3 x 3 x 3	= _____
$8^{\square}$ means	_____	= 4096

Evaluate the following(Show all work)

$$2 \text{ x } 2 \times 2 \text{ x } 2 \text{ x } 2$$

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

base _6_ ← # being Repeated

exponent _4_ ← how many times it is repeated

power _6^4_

Calculator Button

x^y or $\wedge$ or y^x

$\Box^{\Box}$

$x^{\Box}$

So for 5^3

5 x^y 3   5 $\wedge$ 3   5 y^x 3

= 125

x^2 is a special button that squares a #

(means times the number by itself)

x^2

$3^2 = 3 \times 3$

$= 9$

$4^3 = 4 \times 4 \times 4$

$\underbrace{16}\ \times 4$

64

$8^4 = 4096$

$\wedge$

8x 8x8x8

Homework

Handwritten annotations above columns: * ; bottom ; top ; * ; _x_x_x_ ; Answer on Cal

	Power	Base	Exponent	Exponential Form	Expanded Form	Standard Form
a)	7^3			7^3	7x7x7	343
b)	9^4	9	4	9^4	9x9x9x9	6561
c)				6^2		
d)					4x4x4x4x4	
e)	3^5					
f)		10	4			
g)	5^4					
h)	4^5					
i)					8x8x8	
j)				3^9		
k)		8	2			
l)					5x5x5x5x5x5	
m)	3^3					
n)		11	2			
o)		6				1296
p)			5			32

Attachments

WS 2.3 Powers.doc