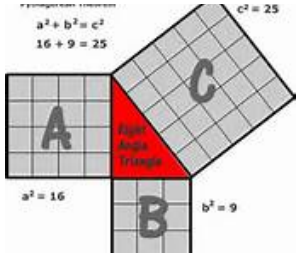
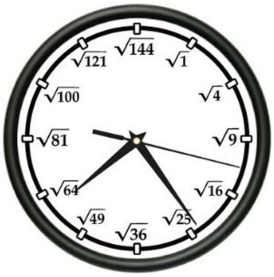
Math 8

Before we start
Unit 1:



Square Roots & Pythagorean Theorem



2^3

Exponents

Exponents are shorthand for repeated multiplication:

Ex) $(5)(5) = 5^2$, $(5)(5)(5) = 5^3$.

$= 25$ $25 \times 5 = 125$ $= 125$

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

Exponent → 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.

$4^3 \Rightarrow 4 \times 4 \times 4$

$= 64$

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	2 x 2 x 2 x 2 x 2	= 32
3^3 means	3 x 3 x 3	= 27
8^4 means	8 x 8 x 8 x 8	= 4096

8 x 8 = 64
8 x 8 x 8 = 512
8 x 8 x 8 x 8 = 4096

Evaluate the following(Show all work)

2 x 2 x 2 x 2 x 2
4 x 2 x 2 x 2
8 x 2 x 2
16 x 2
32

Fill in the blanks

6 × 6 x 6 × 6
36 x 36

base 6

exponent 4

$6^4 = 1296$

power

Calculator Button

x^y or ^ or y^x

So for 5^3

5 x^y 3 5 ^ 3 5 y^x 3

= 125

x^2 is a special button that squares a #

(means times the number by itself)

$3^2 = 3 \times 3$

$= 9$

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

16 x 4

64

$8^4 = 4096$

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

Homework

	Power	Base	Exponent	Exponential Form	Expanded Form	Standard Form
a)	7^3	7	3	7^3	7x7x7	343
b)		9	4			
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)	6^4	6	4	6^4	6x6x6x6	1296
p)		2	5	2^5	2x2x2	32

$1^5 = 1$

$2^5 = 32$

3^5

2^5 2^5=

o) $6^{\square}$

$6^1 = 6$

$6^2 = 36$

$6^3 = 216$

$6^4 = 1296$

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Attachments

WS 2.3 Powers.doc