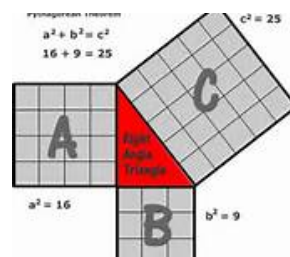
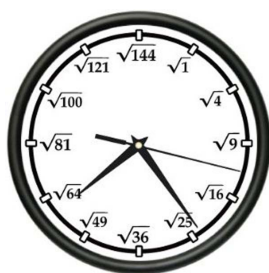




Math 8
Oct. 31, 2016
Before we start
Unit 1:



Square Roots & Pythagorean Theorem



2³



Exponents

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

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

Exponent

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

Repeated

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

Base \rightarrow 5 ^{3 ← exponent}

Given 4^3 , 4 is called the Base and 3 is the exponent.

★ Together, 4^3 is called a power.



4^3 means $4 \times 4 \times 4 = 64$.

$4 \times 4 \times 4$ is the expanded form. (repeated \times)

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

Evaluate the following (Show all work)

$$2 \times 2 \times 2 \times 2 \times 2$$

$$2^5 = \boxed{32}$$

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

being repeated \rightarrow base 6

how many repeats \rightarrow exponent 4

power 6^4



Calculator Button

 x^y

or



or

 y^x
 y^{\square} or x^{\square}


So for $5^3 = 5 \times 5 \times 5 = 125$

 $5 x^y 3$
 $5 \wedge 3$
 $5 y^x 3$
 $= 125$

x^2 is a special button that squares a #

(means times the number by itself)

$$3^2 = 9$$

3×3

 x^2

$$4^3 = 64$$

$4 \times 4 \times 4$

$$8^4 = 4096$$

\wedge

~~expanded~~
form

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