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Warm Up
Grade 8

Oct. 29, 2019

exp

Base

repeated multiplication

on calculator

1) Complete the chart

Power	Base	Exponent	Expanded Form	Exponential Form	Standard form
4^7	4	7	4x4x4x4x4x4x4	4^7	16 384
2^6	2	6	2x2x2x2x2x2	2^6	64
11^3	11	3	11x11x11	11^3	1331
*3^4	3	4	3^4	3x3x3x3	81
*7^5	7	5	7^5	7x7x7x7x7	16807
12^3	12	3	12x12x12	12^3	1728

Show work

* $3^4 = 81$

Check

$1^4 = 1$

$2^4 = 16$

✓ $3^4 = 81$

* $7^5 = 16807$

$7^1 = 7$

$7^2 = 49$

$7^3 = 343$

$7^4 = 2401$

✓ $7^5 = 16807$

Solutions Warm Up

1) Complete the chart

Power	Base	Exponent	Expanded Form	Exponential Form	Standard form
4^7	4	7	4x4x4x4x4x4x4	4^7	16384
2^6	2	6	2x2x2x2x2x2	2^6	64
11^3	11	3	11x11x11	11^3	1331
3^4	3	4	3x3x3x3	3^4	81
7^5	7	5	7x7x7x7x7	7^5	16807
12^3	12	3	12x12x12	12^3	1728

Solution to Homework

	Power	Base	Exponent	Exponential Form	Expanded Form	Standard Form
a)	7^3	7	3	7^3	7x7x7	343
b)	9^4	9	4	9^4	9x9x9x9	6561
c)	6^2	6	2	6^2	6x6	36
d)	4^5	4	5	4^5	4x4x4x4x4	1024
e)	3^5	3	5	3^5	3x3x3x3x3	243
f)	10^4	10	4	10^4	10x10x10x10	10000
g)	5^4	5	4	5^4	5x5x5x5	625
h)	4^5	4	5	4^5	4x4x4x4x4	1024
i)	8^3	8	3	8^3	8x8x8	512
j)	3^9	3	9	3^9	3x3x3x3x3x3x3x3x3	19683
k)	8^2	8	2	8^2	8x8	64
l)	5^6	5	6	5^6	5x5x5x5x5x5	15625
m)	3^3	3	3	3^3	3x3x3	27
n)	11^2	11	2	11^2	11x11	121
o)	6^4	6	4	6^4	6x6x6x6	1296
p)	2^5	2	5	2^5	2x2x2x2x2	32

Ex. 1)
Find the missing exponent. (Show Work)

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a) $4^{\square} = 1024$

$4^1 = 4$
$4^2 = 16$
$4^3 = 64$
$4^4 = 256$
$4^5 = 1024$ ✓

b) $7^{\square} = 343$

$7^1 = 7$
$7^2 = 49$
$7^3 = 343$ ✓

Ex. 2)
Find the missing base.

$\_\_6\_\_^{2} = 36$

$1^2 = 1$
$2^2 = 4$
$3^2 = 9$
$4^2 = 16$
$5^2 = 25$
$6^2 = 36$

$\_\_12\_\_^{3} = 1728$

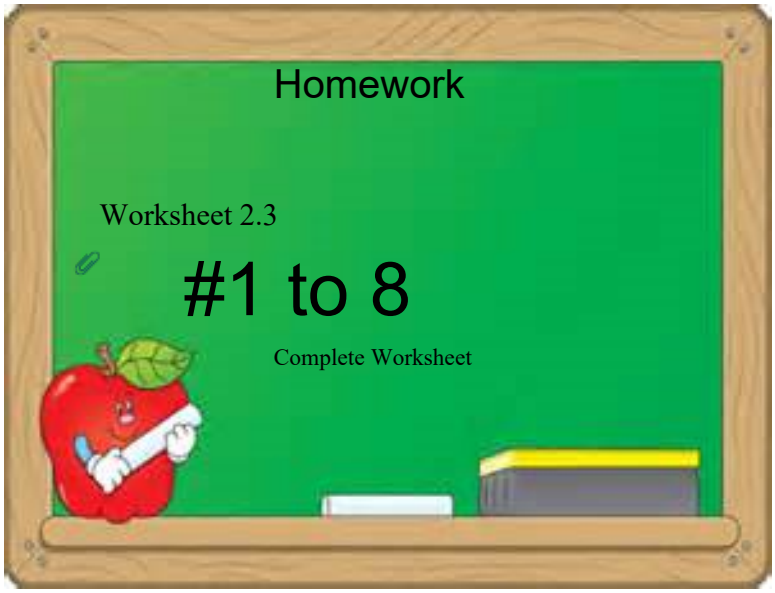
$1^3 = 1$
$2^3 = 8$
$3^3 = 27$
$4^3 = 64$
$5^3 = 125$
$6^3 = 216$
$7^3 = 343$
$8^3 = 512$
$9^3 = 729$
$10^3 = 1000$
$11^3 = 1331$
$12^3 = 1728$

Ex. 3)
Place a < , > or = in the box. (Show your calculation)

3^5 ☐ 6^3

$3^5 = 243$
$6^3 = 216$

$3^5 > 6^3$



Quiz Tomorrow

What do we notice?

3^1 =

10^1 =

12^1 =

17^1 =

27^1 =

99^1 =

10^0 =

2^0 =

81^0 =

21^0 =

13^0 =

5^0 =

Exponents

Whenever you have an exponent of 2, it is said to be squared. 3^2 might be read as 3 squared.

Whenever you have an exponent of 3, it is said to be cubed. 5^3 might be read as 5 cubed.

If the base is raised to the exponent 1, then the answer will always be the base itself.

examples: $15^1 = 15$ $24^1 = 24$ $6\,893^1 = 6\,893$

If the base is raised to the exponent 0, then the answer will always be 1.

examples: $26^0 = 1$ $147^0 = 1$ $945^0 = 1$

Discuss using a calculator

x^y or y^x or y ^

Attachments

WS 2.3 Powers.doc