1.6 Natural Number Exponents
-A- Power of a Real Number

Expanded form : $2\times2\times2\times2\times2\times2\times2 = 128$

Exponential form:

Exponent

Base → $2^7=128$ ← Power

$\therefore\ a^n = a\times a\times \ldots. \times a$ (n times)

Note that:

$a^1 = a$ $\qquad$ $a^0 = 1$

$a^n =$ $\qquad$ **if** the 'a' is negative and 'n' is odd

Ex: $(-2)^3 = (-2)(-2)(-2) = -8$

$(-a)^n = (-a)\times(-a)\times \ldots. \times(-a)$ (n times)

$-a^n = -a\times a\times \ldots. \times a$ (n times)

Ex 1: Expand and evaluate:

a) $7^3 =$

b) $x^4 =$

c) $9^1 =$

d) $5^0 =$

e) $(-8)^4 =$

f) $-8^4 =$

g) $(7)(6)(7)(6) =$

Ex 2: Evaluate:

a) $2 \times 10^3 + 6 \times 10^2 + 7 \times 10 + 3$

b) $\dfrac{2^4 + 5^2}{3^3}$

Ex 3: Folding Paper Experiment

# Folds	# Sections	Expanded Form	Exponent Form
1	2	2	2^1
2	4	2x2	
3			
4			
5			
6			
7			
n			

Claim: A dry piece of paper cannot be folded in perpendicular halves more than seven times, regardless of its size

Mythbusters http://www.youtube.com/watch?v=kRAEBbotuIE

Practice:
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9(abc), 10(abc), 11(abc)