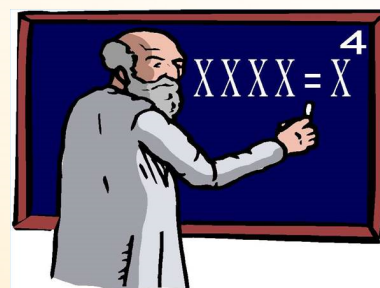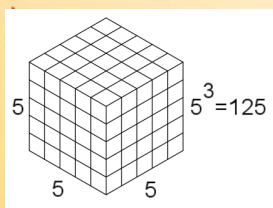$2 \times 2 = 2^2 = 4$

$2 \times 2 \times 2 = 2^3 = 8$

$2 \times 2 \times 2 \times 2 = 2^4 = 16$

$2 \times 2 \times 2 \times 2 \times 2 = 2^5 = 32$

$2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^6 = 64$

$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^7 = 128$

Unit 2

October 3, 2019

Powers and Exponent Laws

$5^3 = 125$

$XXXX = X^4$

A power is a compact [smaller] way to write a big/small number.

Instead of saying 4x4x4x4x4x4x4 we say 4^7

Read as 4 to the exponent 7

TERMS TO KNOW:

1. **power**- an expression of the form a^n, where **a** is the base and **n** is the exponent; it represents a product of equal factors; for example,   *4 X 4 X 4= 4^3*

POWER $\left\{ \vphantom{\Large 4^3} \right.$ 4^3

EXPONENT

BASE

125 is the same as 5^3

* 125 is STANDARD FORM [the number, answer

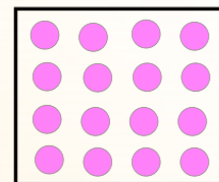* 5x5x5 is a REPEATED MULTIPLICATION

* And 5^3 is a ___POWER___.

*5^3 is read as <u>5 to exponent 3</u> or 5 cubed
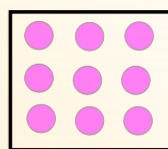
Square Number

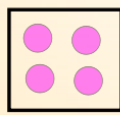- **A power with an integer base and exponent 2 is a square number.**

Example $4^2 = 16$

standard
form.

power

$$1 \quad 4 \quad 9 \quad 16$$

We can write 4^2 in three ways:
1. Standard form: 16
2. As repeated multiplication: 4 x 4
3. As a power: 4^2

Cube Number

• A power with an integer base and exponent 3 is a cube number.

Power

Standard Form

Repeated Multiplication

6^3

216

6 X 6 X 6

Write each of the following as:

Repeated Multiplication	Power	Standard form [Evaluate]
A. 3 x 3 x 3 x 3 x 3 x 3 =		
B. 7=		
C. 4 x 4 x 4=		