Math 9   *Name:* _____

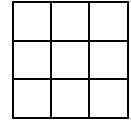**2.0 – Introduction to Powers**   *Date:* _____

Homework Assignment

A power of 2 is used to write a number as a **SQUARE** number. A square number can be expressed as:

I. Area MODEL

e.g. This *Area Model* represents the value 9, because it has an **AREA** of 9 $units^2$

II. Standard Form

Standard form is simply the total AREA of the *Area Model* shown above → **9**

II. Exponent Form

An example of exponent form is when we write the AREA using a POWER of 2 → $3^2 = \left[side\ length\right]^2$

III. Expanded Form or Product Form

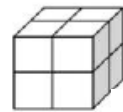Expanded form is when we write the AREA as a product or repeated multiplication using equal factors:

$$→ 3 \times 3 \quad \left[Note:\ 3 \times 3 = 9\right]$$

So…the number 9 can be written as: **9**   or   **3^2**   or   **3 x 3**

A power of 3 is used to write a number as a **CUBIC** number. A cubic number can be expressed as:

I. Volume MODEL

e.g. This *Volume Model* represents the value 8, because it has a VOLUME of 8.

II. Standard Form

Standard form is simply the total VOLUME of the *Volume Model* shown above → **8**

II. Exponent Form

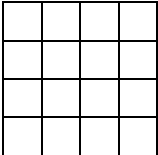An example of exponent form is when we write **8** using a POWER of 3 → $2^3 = \left[side\ length\right]^3$
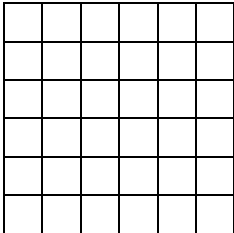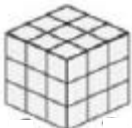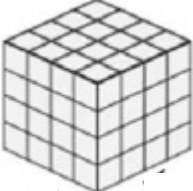
III. Expanded Form or Product Form

Expanded form is when we write the VOLUME as a product of equal factors:

$$→ 2 \times 2 \times 2 \quad \left[Note:\ 2 \times 2 \times 2 = 8\right]$$

So…the number 8 can be written as: **8**   or   **2^3**   or   **2 x 2 x 2**

Complete the following table:

Area/Volume Model	Exponent/Power Form	Expanded/Product Form	Standard Form
Draw model here		3×3	
Draw model here			**1**