**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**M8-U6: Notes #1 – Exponent Operations: vocab, like bases, non like bases, power to a power, evaluating Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Vocabulary:**

**Ex.  Algebraic Rule: ***n* times

**Exponent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Power: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Evaluate: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Example 1: Writing in exponential notation**

|  |  |  |
| --- | --- | --- |
| **Expanded Form** | **Exponential Notation** | **Evaluate (Fraction or Decimal)** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Try-It!**

**a.** How would we write **** in expanded form?

**b.** How would we write **** in expanded form?

**c.** Explain whether or not  is equivalent to .

**Try Its:**

Tell whether each statement is correct. Show work to support your answer.

**a)** **** **b)** ****

**c)** **** **d)** ****

**e)** ****  **f)** ****

**Example 2: Product of Powers Property**

Write the product in expanded form: ****

Now write the product with a single base: **\_\_\_\_\_\_\_\_\_\_\_\_**

Write the product in expanded form: ****

Now write the product with a single base: **\_\_\_\_\_\_\_\_\_\_\_\_**

**Rule: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Try Its: Rewrite each item as an equivalent expression in exponential notation.**

**a)** **** **b)** ****

**c)** **** **d)** ****

**e)** **** **f)** ****

Tell whether each statement is correct. Show work to support your answer.

**g)** **** **h)** ****

**Example 3: Power to a Power**

Write the product in expanded form: ****

Now write the product with a single base: **\_\_\_\_\_\_\_\_\_\_\_\_**

Write the product in expanded form: ****

Now write the product with a single base: **\_\_\_\_\_\_\_\_\_\_\_\_**

**Rule: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Try Its: Rewrite each item as an equivalent expression in exponential notation.**

**a)** **** **b)** ****

**c)** **** **d)** ****

**e)** ****

Tell whether each statement is correct. Show work to support your answer.

**f)** **** **g)** ****