**ML #1: Exponents (Exponents Unit math 7 Plus)**

**Part l: Vocabulary: Base Exponent Expression Exponential Form**

**Part II: Exponent/Exponential Form Review**

* **Write each of these expressions in exponential form.**
1. $a ∙a ∙a$ **b) -2** $∙ -2 ∙ -2 ∙ -2$ **c) 4**
* **Determine the value of each of these expressions.**
1. $2^{4}$ b) $(-3)^{2}$ c) -32 d) n3  for n = 5

**Part llI: Basic Exponent Rules**

**Complete the following Tables. Look for patterns and generalization you can make concerning exponents.**

|  |  |  |
| --- | --- | --- |
| **2x** | **5x** | **10x** |
| **24 =**  | **54 =**  | **104 =**  |
| **23 =** | **53 =** | **103 =** |
| **22 =** | **52 =** | **102 =** |
| **21 =** | **51 =** | **101 =** |
| **20 =** | **50 =** | **100 =** |
|  |  |  |
|  |  |  |
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|  |  |
| --- | --- |
| **What do you notice…** | **Rule** |
| **about any nonzero number to the power of zero?**Ex: 60  or x0 | **For every nonzero number x, x0 (power of zero)**  |
| **would happen if we extend the pattern in the tables?** | **For every nonzero number x, x-a (negative power)**  |

* **Simplify**
1. **6-3 2) h0 3) -3xy-4 4)** $\frac{4}{m^{-2}}$
* **Evaluate for a = 3, b = -2**
1. **4a2b-3 2) a-3 3) b-2**
* **Write using negative exponents**
1. $\frac{1}{100}$ **2)** $\frac{1}{32}$ **3)** $\frac{1}{n^{4}}$ **4)** $\frac{1}{a^{3}b^{7}}$

Practice for Exponents Unit ML #1 (Math 7+)

1. Write each of these expressions in exponential form.

a) (-6) • (-6) • (-6) = $c) x∙x∙x∙x∙x$ = d) 9 =

1. Determine the value of each of these expressions.
2. $3^{4}$ b) $(-5)^{2}$ c) -52 d) n3  for n = -4
3. Simplify each expression.
4. $(7^{3}-4)+3^{5} b) 18-3^{2}∙6$

4. To find the sum of the first *n* positive numbers you can use the formula $\frac{1}{2}\left(n^{2}+n\right)$

a)What is the sum of the first 7 positive numbers?

b)What is the sum of the first 30 positive numbers?

1. Simplify

a) -7g-2 b) (-4.6)0  c) $\frac{1}{y^{-5}}$

1. Evaluate for a = 3, b = -2

a) 4a-4b2 b) a-2 c) b-4

1. Write using negative exponents

a) $\frac{1}{10000}$ b) $\frac{1}{64}$ c) $\frac{1}{n^{6}}$ d) $\frac{1}{a^{2}b^{10}}$