***Product Law and Quotient Law of Exponents Class Activity***

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|  | 1. **CLASSROOM** The dimensions in Ms. Passarella’s classroom are represented in the diagram below. She wants to put down leopard carpet. Find the area of the classroom so she knows how much leopard carpet to buy. ***Show all work using expanded form and write your answer in exponential form.***

 |  | **2. PAINTING** Ashley is painting a wall. The base of the wall is and the height of the wall is. Find the area of the wall so Ashley knows how much paint she needs. ***Show all work using expanded form and write your answer in exponential form.*** |

1. What words/phrases led you to multiply for questions 1 and 2?
2. What happened to the base when you multiplied?
3. How do the exponents in the question compare to the exponents in the answer?
4. What could you conclude about multiplying with exponents?

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| **3.) COMPUTERS** The byte is the fundamental unit of computer processing. The byte is based on powers of x, as shown in the table. How many times greater is a gigabyte than a megabyte? ***Show all work using expanded form and write your answer in exponential form.***

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| **Memory Term** | **Number of Bytes** |
| byte | $x^{0}$ or 1 |
| kilobyte | $$x^{2}$$ |
| megabyte | $$x^{7}$$ |
| gigabyte | $$x^{10}$$ |

 | **4.)** **. SEATING** The table below shows the seating capacity of two different facilities. About how many times greater is the capacity of Madison Square Garden in New York than a typical movie theater? ***Show all work using expanded form and write your answer in exponential form.*** |

1. What words/phrases led you to divide for questions 3 and 4?
2. What happened to the base when you divided?
3. How do the exponents in the question compare to the exponents in the answer?
4. What could you conclude about dividing with exponents?