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

**M8-U6: Exponents Review Total: 50pts**

**Multiple Choice:**

*Identify the choice that best completes the statement or answers the question.* ***(2pts each)***

**Determine an equivalent expression in exponential notation.**

\_\_\_\_ **1.** The expression  is equivalent to

**a)**  **b)**  **c)**  **d)** 

\_\_\_\_ **2.** 

**a)**  **b)**  **c)**  **d)** 

\_\_\_\_ **3.** 

**a)**  **b)**  **c)**  **d)** 

\_\_\_\_ **4.** 

**a)**  **b)**  **c)**  **d)** 

\_\_\_\_ **5.** 

**a)**  **b)**  **c)**  **d)** 

\_\_\_\_ **6.** 

**a)**  **b)**  **c)**  **d)** 

**Write the number in scientific notation.**

\_\_\_\_ **7.** 4,185

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

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

**Write the number in standard form.**

\_\_\_\_ **8.** 

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

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

\_\_\_\_ **9.** Which of the following is equivalent to  meters?

**a)** 1.5 centimeters **b)** 0.15 millimeters

**c)** 1.5 kilometers **d)** 0.015 centimeters

\_\_\_\_ **10.** The combined volume of all the tanks at an aquarium is  gallons. The aquarium plans to install a new dolphin tank with a volume of 250,000 gallons. What will be the total volume of all the tanks at the aquarium after the new dolphin tank is installed?

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

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

**Tell whether each statement is correct. Show work to support your answer. *(2pts each)***

**11.**  **12.** 

**13.**  **14.** 

**For question 15 & 16: *(2pts each)***

Identify the greater number in each pair of numbers. Justify your reasoning.

**15.**  **16.** 

**17.** The inside diameter of a certain size of ring is  meter. Is it more appropriate to report the ring diameter as  meter or 17.32 millimeters? *Explain.* ***(2pts)***

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Perform the following operations. Write each answer in scientific notation. *(2pts each)***

**18.**  **19.** 

**20.**  **21.** 

**22.** Factories A and B produced potato chips. Last year, each factory reported the amount of each ingredient. Factory A reported their amounts in scientific notation and Factory B reported their amounts in standard form. ***(6pts)***

|  |  |  |
| --- | --- | --- |
| **Ingredient** | **Factory A (amount used in lbs)** | **Factory B (amount used in lbs)** |
| Potato |  | 3,309,000 |
| Oil |  | 356,000 |
| Salt |  | 193,500 |

*Show your work or explain, leave your answers in scientific notation.*

Which factory used more oil last year? By how much?

What is the total amount of salt used by both factories?

What is the total weight of all of the ingredients in Factory A?

**23.** The table shows the weights of some animals.***(2pts)***

|  |  |
| --- | --- |
| **Animal** | **Average weights in lbs** |
| African Bush Elephant |  |
| Hippopotamus |  |
| Walrus |  |

How many times greater is the average weight of an African Bush Elephant than the average weight of a Hippopotamus?