Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_\_\_\_\_ Number:\_\_\_\_\_\_\_\_\_

**Unit 2.2-2.3 Review—Scientific Notation**

**2.2: I Can write and interpret scientific notation.**

*For problems 1-6, convert the scientific notation to standard form.
For problems 7-12, convert the standard form to scientific notation.*

|  |  |
| --- | --- |
| 1) $3.94 x 10^{5}$ | 7) $23,000,000$ |
| 2) $5.1 x 10^{-8}$ | 8) $0.00043$ |
| 3) $2.9345 x 10^{3}$ | 9) $456,000,000,000,000$ |
| 4) $9.87 x 10^{-3}$ | 10) $0.346$ |
| 5) $7.73 x 10^{4}$ | 11) $135460$ |
| 6) $1.93 x 10^{-7}$ | 12) $0.000039$ |

13) Multiply 328,000 x 234 in your calculator. Then write your answer in scientific notation.

14) Multiply 0.00000134 x 650 in your calculator. Then write the answer in scientific notation.

15) The galaxy Andromeda has a solar weight of 710,000,000,000. Express this number in scientific notation.

16) The approximate weight of a penny is 0.00551 pounds. Express this number in scientific notation.

17) The galaxy Andromeda is $2.4 x 10^{13}$ km away from Earth. Express this number in standard form.

18) A semi-truck weighs approximately $1.64 x 10^{5}$ pounds. Express this number in standard form.

19) In scientific notation, what is the difference between positive and negative exponents? How are they different? **Use an example of each in your explanation!**

22) The following numbers represent the population for countries in the world.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| USA | Japan | Indonesia | Canada | Croatia | China | Spain |
| 318,867,000 | 1.27 x 108 | 2.52 x 108 | 35,000,000 | 4.27 x 106 | 1.37 x 109 | 46,507,800 |

(Write the names of the COUNTRIES in order from least to greatest)

Least \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_Greatest

23) Put the following numbers in order from Least to Greatest (write the letters):

A) 0.0034 B) $2.5 x 10^{-6}$ C) $3.7 x 10^{-3}$ D) 0.000053 E) $5.9 x 10^{-5}$

Least \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ Greatest

**2.3—I Can perform operations on scientific notation.**

*Write all answers in* ***SCIENTIFIC NOTATION****.*

|  |  |
| --- | --- |
| 1. $\left(3 x 10^{2}\right) (4 x 10^{4})$
 | 1. $\frac{3 x 10^{7}}{18 x 10^{5}}$
 |
| 1. $(1.6 x 10^{2})(2.7 x 10^{1})$
 | 1. $\frac{8.45 x 10^{6}}{3.1 x 10^{11}}$
 |
| 1. $\left(6.34 x 10^{-5}\right)\left(2.8 x 10^{12}\right)$
 | 1. $\frac{1.2 x 10^{-8}}{6.3 x 10^{5}}$
 |
| 1. $\left(3 x 10^{8}\right)(6.7 x 10^{5})$
 | 1. $\frac{2.9 x 10^{2}}{5.2 x 10^{-4}}$
 |
| 1. $(4.5 x 10^{6})(2.3 x 10^{3})$
 | 1. $\frac{7.4 x 10^{-4}}{9.7 x 10^{-6}}$
 |
| 1. $\left(9.3 x 10^{3}\right)x 6400$
 | 1. $\frac{23000}{1.6 x 10^{2}}$
 |

|  |
| --- |
| 1. The mass of the Jupiter is 1.89 x 1027 kg. The mass of the Mercury is 3.28 x 1023 kg. How many times bigger is the mass of Jupiter than the mass of Mercury?
 |
| 1. A quarter has a mass 5.67 x 10-3 kg and a penny has mass 2.5 x 10-3 kg. How many times bigger is the quarter than the penny?
 |