

Unit 2: Scientific Notation

Name _____ Period _____ Date _____

Test Study Guide

Directions: Use properties of exponents to simplify completely.

1) $z^0 =$ _____

2) $3^{-3} =$ _____

3) $\left(\frac{4}{9}\right)^{-2} =$ _____

4) $p^{-3} \cdot p^{-5} =$ _____

5) $\frac{p^{-3}}{p^{-5}} =$ _____

6) $\frac{x^{11}}{x^{-4}} =$ _____

7) $y^{-2} \cdot y^5 \cdot y^{-5} =$ _____

8) $\frac{xy^{-5}}{xy} =$ _____

9) $z^7 \cdot z^2 \cdot z =$ _____

10) $(y^3)^{-2} =$ _____

Directions: Write the following in scientific notation.

11) $4,210,000 =$ _____

12) $0.0000421 =$ _____

13) $29 \times 10^4 =$ _____

14) $.014 \times 10^{-3} =$ _____

Directions: Write the following in standard form.

15) $3.15 \times 10^6 =$ _____

16) $3.15 \times 10^{-6} =$ _____

Directions: Order the following from least to greatest.

17) $1.14 \times 10^5, 114 \times 10^5, 0.014 \times 10^{-3}, 11.4 \times 10^{-3}$

_____, _____, _____, _____

Directions: Perform the indicated operations. Express solutions in scientific notation.

18) $(2.3 \times 10^{-1})(1.4 \times 10^5) =$

19) $(1.92 \times 10^5) \div (9.6 \times 10^{-3}) =$

20) $(4.2 \times 10^{-2}) + (3.7 \times 10^{-2}) =$

21) $(1.7 \times 10^6) - (1.5 \times 10^6) =$

Directions: Use your knowledge of scientific notation to answer the following questions.

22) 9×10^6 is approximately _____ times larger than 3×10^4 .

23) If there are approximately 3×10^8 people in the United States and approximately 7×10^9 people in the world, then the world population is approximately _____ times larger than the population of the United States.

24) Which of the following rates would be best to use to describe the rate of the sea level rising?

A. 1.5×10^0 mm/year

B. 1.5×10^{-1} cm/year

C. 1.5×10^{-2} dm/year

C. 1.5×10^{-3} m/year