

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Notes: Scientific Notation

Why do we use scientific notation? \_\_\_\_\_

What two things are always true of a number written in scientific notation?

1. \_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

Circle the numbers that are correctly written in scientific notation and place an X over the numbers that are not.

$12.8 \times 10^6$

$2.56 \times 10^{-16}$

$5.2 \times 10^{1.6}$

$4.35 \times 10^6$

$1.28 \times 10^6$

$8.93 \times 10^{1.6}$

$3.47 \times 10^6$

$20.1 \times 10^5$

What does a positive exponent mean? \_\_\_\_\_

What does a negative exponent mean? \_\_\_\_\_

**Match each number below to the same number written in scientific notation. Circle your choice.**

**Number:**                      **Scientific Notation:**

$1\ 280\ 000.0 = 1.28 \times 10^6 \text{ or } 1.28 \times 10^{-6}$

$620\ 000\ 000 = 6.2 \times 10^8 \text{ or } 6.2 \times 10^{-8}$

$0.000\ 000\ 15 = 1.5 \times 10^7 \text{ or } 1.5 \times 10^{-7}$

$-3\ 200.00 = -3.2 \times 10^3 \text{ or } -3.2 \times 10^{-3}$

$0.000\ 025\ 1 = 2.51 \times 10^5 \text{ or } 2.51 \times 10^{-5}$

$1\ 370\ 000\ 000 = 1.37 \times 10^9 \text{ or } 1.37 \times 10^{-9}$

$561\ 000\ 000 = 5.61 \times 10^8 \text{ or } 5.61 \times 10^{-8}$

**Number:**                      **Scientific Notation:**

$0.000\ 044 = 4.4 \times 10^5 \text{ or } 4.4 \times 10^{-5}$

$-0.000\ 005\ 6 = -5.6 \times 10^6 \text{ or } -5.6 \times 10^{-6}$

$780\ 000.0 = 7.8 \times 10^5 \text{ or } 7.8 \times 10^{-5}$

$0.000\ 034 = 3.4 \times 10^5 \text{ or } 3.4 \times 10^{-5}$

$725\ 000\ 000 = 7.25 \times 10^8 \text{ or } 7.25 \times 10^{-8}$

$0.000\ 000\ 35 = 3.5 \times 10^7 \text{ or } 3.5 \times 10^{-7}$

$0.000\ 012 = 1.2 \times 10^5 \text{ or } 1.2 \times 10^{-5}$

Write the following numbers in scientific notation.

Number:	Scientific Notation:
230 000 000	= _____
66 500.0	= _____
0.000 89	= _____
452 000 000 000	= _____
470 000.00	= _____

Number:	Scientific Notation:
0.000 000 054	= _____
740 000 000	= _____
0.000 000 075	= _____
63 500 000	= _____
0.000 000 20	= _____

Putting a number in scientific notation into the calculator:

- Step #1: \_\_\_\_\_
- Step #2: \_\_\_\_\_
- Step #3: \_\_\_\_\_
- Step #4: \_\_\_\_\_



Write the numbers below in correct scientific notation:

3.01E24

1.51E24

7.4E25

1.64E-27

Multiply the following numbers. Be sure to place the numbers into the calculator correctly.

(2)(2.5 × 10 <sup>2</sup> ) = _____	(1.4)(4.6 × 10 <sup>24</sup> ) = _____
(6)(4.5 × 10 <sup>4</sup> ) = _____	(2.6)(5.6 × 10 <sup>27</sup> ) = _____
(7)(1.8 × 10 <sup>-5</sup> ) = _____	(10)(2.6 × 10 <sup>-24</sup> ) = _____

Divide the following numbers. Be sure to place the numbers into the calculator correctly.

7.82 × 10 <sup>3</sup> ÷ 2.35 × 10 <sup>3</sup> = _____
5.0 × 10 <sup>30</sup> ÷ 9.0 × 10 <sup>29</sup> = _____
3.01 × 10 <sup>24</sup> ÷ 6.02 × 10 <sup>23</sup> = _____
7.2 × 10 <sup>5</sup> ÷ 5.7 × 10 <sup>4</sup> = _____
1.5 × 10 <sup>8</sup> ÷ 6.0 × 10 <sup>6</sup> = _____