1) 7×10

2) 3.6×1000

3) 7.21×100

4) $2.39 \times 1{,}000{,}000$

5) Write this as a fraction and a decimal: 10^{-4}

6) Write as a decimal: 10^{-10}

SCIENTIFIC NOTATION

D#vkruwfxw#iru#z uwqj#yhu/#olujh#ru#yhu/#vp doo#qxp ehuv1

2 factors

3.28×10^{3} 5.76×10^{-3}

a) must be a number **≥ 1** and **< 10**.

b) must be a ###srz hu#ri#431

Note: If the exponent is negative, the number is small

If the exponent is positive, the number is large

Practice: *Are the following numbers written in proper scientific notation?*

2.35×10^{5}

2.1203×10^{-16}

0.5×10^{-9}

45.9×3^{-6}

3.214×10^{1}

12×10^{0}

10.3×10^{9}

6.09×1^{7}

1.9×10^{-22}

Writing in Scientific Notation

All scientific notation must be in the following format:

___ . _____ x $10^{\square}$

Examples: Write each number in scientific notation.

Standard Form	***Scientific Notation***
1) 456,000,000	
2) 63,800,000,000,000	
3) 6,000	
4) 0.0000000034	
5) 0.0000628	
6) 0.007	
7) 4, 000, 001	

Scientific Notation to Standard Form

LOOK at the exponent and you know how to move the decimal.

If POSITIVE, ***move*** to the RIGHT.

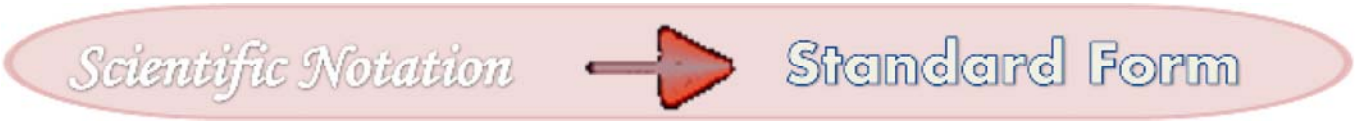
If NEGATIVE, ***move*** to the LEFT.

Examples:

1) 2.735×10^{5}

2) 4.01×10^{-3}

Examples: Write each number in standard form.



1) 7.82×10^{8}

2) 3.04×10^{-3}

3) 5×10^{-4}

4) 6.2013×10^{10}

Write these in correct scientific notation:

1) 12×10^{2}

2) 0.5×10^{-9}

3) 15×10^{3}

4) 45.9×10^{-6}

5) 40. 02

6) 357. 12

7) 4,053, 500. 6

8) 45, 000.4

Word Problems:

1. As the planets orbit the sun, Pluto gets as close as approximately 2,700,000,000 miles to earth. Rewrite this number in scientific notation.

2. The speed of light in a vacuum is approximately 186,000 miles per second. Rewrite this number in scientific notation.

3. Human fingernails grow at a rate of about 0.00286 inches per day. Rewrite this number in scientific notation.

4. The thickness of a red blood cell is approximately 0.0003125 of an inch. Rewrite this number in scientific notation.