

9-5 Scientific Notation

Mrs. Gross




Standard form: 8,750,000,000
 Scientific notation: 8.75×10^9

Standard form: 0.0000019
 Scientific notation: 1.9×10^{-6}



what you need to know!

- In scientific notation, the decimal ALWAYS appears after the first digit (which cannot be a zero).
- A positive exponent indicates a LARGE number ***
- A negative exponent indicates a SMALL number 

Scientific notation to standard form:

Scientific notation: 6.837×10^8
 Standard form: 683,700,000.

Scientific notation: 5.23×10^{-5}
 Standard form: 0.0000523

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Multiplying using scientific notation

Remember $2^4 \cdot 2^5 = 2^9$

$$(2 \times 10^6) (4 \times 10^4) = 8 \times 10^{10}$$

but....

$$(2.6 \times 10^3) (8.9 \times 10^8) = 2.314 \times 10^{12}$$

What happened?

they don't
add up
nicely

$$2.6 \times 8.9 =$$

$$23.14 \times 10^{11}$$

becomes

$$2.314 \times 10^{12}$$

The decimal is
in the wrong
place!

So you have to fix it!