

Scientific Notation

8th Grade

Very big and very small numbers, written so you can compare them.

A number in scientific notation is written as a value between 1 and 10, multiplied by a power of ten.

$$a \times 10^n, \text{ where } 1 \leq a < 10$$

4,800,000

4.8×10^6

The point moved six places left, so the power is positive.

0.00032

3.2×10^{-4}

Moved four places right, so the power is negative.

$(3 \times 10^4)(2 \times 10^3)$

6×10^7

Multiply the numbers, add the exponents.

$(8 \times 10^5) \div (2 \times 10^2)$

4×10^3

Divide the numbers, subtract the exponents.

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$\times 48 \times 10^5$

✓ 4.8×10^6

The first part must be between 1 and 10. 48 is too big.

Big number, positive power. Small number, negative power. The exponent counts the decimal moves.