Multiply numbers in scientific notation

$(3 \times 10^5)(4 \times 10^7)$

$12 \times 10^{5+7}$

12×10^{12}

12×10^{13}

1.2×10

1. Multiply the mantissa's
2. Add the exponents
3. Ensure the mantissa still meets the conditions for scientific notation

$(2 \times 10^{-3})(3.5 \times 10^{-6})$

$7 \times 10^{-3+-6}$

7×10^{-9}

$(1 \times 10^{11})(5 \times 10^{4})$

$5 \times 10^{11+4}$

5×10^{15}

$(1.25 \times 10^{7})(4 \times 10^{9})$

$5 \times 10^{7+9}$

5×10^{16}

$(8.2 \times 10^{24})(3 \times 10^{-9})$

$24.6 \times 10^{24+-9}$

24.6×10^{15}

2.46×10^{16}

Dividing number in scientific notation

$$\frac{2 \times 10^{8}}{5 \times 10^{4}}$$

$0.4 \times 10^{8-4}$

0.4×10^{4}

4×10^{3}

1. Divide the mantissa's
2. Subtract the exponents
3. Ensure the mantissa still meets the conditions for scientific notation.

$$\frac{9.6 \times 10^{5}}{3 \times 10^{2}}$$

$3.2 \times 10^{5-2}$

3.2×10^{3}

$$\frac{7 \times 10^{12}}{2 \times 10^{-3}}$$

$3.5 \times 10^{12-(-3)}$

3.5×10^{15}

$$\frac{8 \times 10^{18}}{8 \times 10^{6}}$$

$1 \times 10^{18-6}$

1×10^{12}

$$\frac{1 \times 10^{-7}}{4 \times 10^{-14}}$$

$0.25 \times 10^{-7-(-14)}$

0.25×10^{7}

2.5×10^{6}