

34.1 Scientific Notation - Worksheet 1

1

Convert the following list of numbers into scientific notation.

$38000000000 =$

$17500000000000000000 =$

$8600000000000000 =$

$20000 =$

$3727000000000 =$

$6811000000000000 =$

There's no "work" to show here. Count carefully!

2

Convert the following list of numbers into scientific notation.

$0.00000000032 =$

$0.0000751 =$

$0.0000003 =$

$0.000000000866 =$

$0.00073 =$

$0.000000045 =$

3

Convert the following list of numbers into standard form.

$2.45 \times 10^7 =$

$8.12 \times 10^3 =$

$3.8 \times 10^5 =$

$5.318 \times 10^{10} =$

$7.5 \times 10^6 =$

$6.38 \times 10^9 =$

4

Convert the following list of numbers into standard form.

$1.86 \times 10^{-3} =$

$3.8 \times 10^{-6} =$

$6.83 \times 10^{-5} =$

$5 \times 10^{-9} =$

$8.931 \times 10^{-7} =$

$8.12 \times 10^{-2} =$

34.2 Scientific Notation - Worksheet 2

1

Convert the following list of numbers into scientific notation.

$$680000000 =$$

$$110000000000 =$$

$$0.0000000138 =$$

$$1830000000 =$$

$$0.000008861 =$$

$$0.00000000000003 =$$

2

Convert the following list of numbers into standard form.

$$3.22 \times 10^5 =$$

$$4.9 \times 10^{-6} =$$

$$7.69 \times 10^{-4} =$$

$$9.08 \times 10^8 =$$

$$3.83 \times 10^7 =$$

$$8.18 \times 10^{-5} =$$

3

Convert the following numbers into both scientific notation and standard form.

Scientific Notation

Standard Form

$$23.86 \times 10^{-5} =$$

=

$$480000 \times 10^3 =$$

=

$$0.000831 \times 10^6 =$$

=

4

Determine the value of a that will make each of these equalities valid.

$$5.383 \times 10^6 = a \times 10^5, a =$$

$$5.383 \times 10^6 = a \times 10^7, a =$$

$$5.383 \times 10^6 = a \times 10^4, a =$$

$$5.383 \times 10^6 = a \times 10^8, a =$$

34.3 Scientific Notation - Worksheet 3

1 Calculate $(3 \times 10^5) + (6 \times 10^5)$ and $(8 \times 10^{-8}) + (9 \times 10^{-8})$. Give your final answer in scientific notation.

2 Calculate $(4 \times 10^7) + (7 \times 10^8)$ and $(6 \times 10^{-5}) + (9 \times 10^{-4})$. Give your final answer in scientific notation.

3 Calculate $(3 \times 10^4) \cdot (6 \times 10^5)$ and $(5 \times 10^{-8}) \cdot (8 \times 10^{-6})$. Give your final answer in scientific notation.

4 Calculate $(8 \times 10^4) \cdot (4 \times 10^{-6})$ and $(9 \times 10^{-3}) \cdot (2 \times 10^4)$. Give your final answer in scientific notation.

34.4 Scientific Notation - Worksheet 4

1 Calculate $(5 \times 10^5) + (8 \times 10^7)$ and $(8 \times 10^{-5}) - (5 \times 10^{-7})$. Give your final answer in scientific notation.

2 Calculate $(8 \times 10^{-3}) + (7 \times 10^{-2})$ and $(8 \times 10^{12}) - (5 \times 10^{11})$. Give your final answer in scientific notation.

3 Calculate $(7 \times 10^5) \cdot (8 \times 10^{-3})$ and $(2 \times 10^{-5}) \cdot (5 \times 10^4)$. Give your final answer in scientific notation.

4 Calculate $\frac{8 \times 10^4}{4 \times 10^{-6}}$ and $\frac{9 \times 10^{-5}}{3 \times 10^{-2}}$. Give your final answer in scientific notation.

Neither of these calculations should require a calculator.

34.5 Scientific Notation - Worksheet 5

In practice, calculations done in scientific notation are done by calculator. More advanced calculators can handle the scientific notation on its own, but others can't. We are going to practice calculations as if the calculators cannot handle scientific notation. The reason for this is to emphasize the logic of scientific notation.

The process of performing the calculation is the same as in the previous problems, except that instead of using mental arithmetic to calculate things like $40 + 8$ and $3 \cdot 5$, you would use the calculator to calculate things like $31.57 + 1.79$ and $(2.83) \cdot (8.9)$.

Different calculators present scientific notation differently. You should learn how your specific calculator works.

1 Calculate $(2.8619 \times 10^6) + (3.18 \times 10^4)$ using a calculator. Give your final answer in scientific notation.

2 Calculate $(1.86 \times 10^6) \cdot (4.03 \times 10^{-3})$ using a calculator. Give your final answer in scientific notation.

3 Calculate $\frac{8.136 \times 10^{-5}}{2.9 \times 10^4}$ using a calculator. Give your final answer in scientific notation.