

Scientific (Exponential) Notation Worksheet

Name: Key.

1. Express each of the following standard form numbers in scientific notation:

a. $75890 = 7.5890 \times 10^4$ b. $1 = 1 \times 10^0$

c. $0.000189 = 1.89 \times 10^{-4}$ d. $450000000 = 4.5 \times 10^8$

e. $8.75 = 8.75 \times 10^0$ f. $0.0000006098 = 6.098 \times 10^{-7}$

2. Express each of the following in standard notation:

a. $4.56 \times 10^{-3} = 0.00456$ b. $1.25 \times 10^{14} = 125000000000000$

c. $0 \times 10^5 = 0$ d. $1.005005 \times 10^8 = 100500500$

e. $2.4 \times 10^{-9} = 0.0000000024$ f. $1.567 \times 10^0 = 1.567$

3. Express each of the following numbers in **correct** scientific notation:

a. $39.07 \times 10^{-14} = \frac{0.0000000000003907}{3.907 \times 10^{-13}}$ b. $18.89 \times 10^5 = 1889000 = 1.889 \times 10^6$

c. $577.8 \times 10^{-6} = 0.0005778 = 5.778 \times 10^{-4}$ d. $125.5 \times 10^{-2} = 1.255 \times 10^0$

e. $0.00854 \times 10^{-5} = 8.54 \times 10^{-8}$ f. $0.00387 \times 10^5 = 3.87 \times 10^2$

g. $0.0000552 \times 10^2 = 5.52 \times 10^{-3}$ h. $555.5 \times 10^4 = 5555000 = 5.555 \times 10^6$

4. Perform the following calculations and report your answers in scientific notation:

a. $(2.35 \times 10^5)(4.56 \times 10^{-3})(2 \times 10^4) = 2.1432 \times 10^7$

b. $(1.375 \times 10^{12})(4.5 \times 10^{-5})(1.5 \times 10^{-3}) = 9.28125 \times 10^4$

c. $(6.95 \times 10^6) / (4.09 \times 10^3) = 1.699 \times 10^3$

d. $(1.0003 \times 10^{-4}) / (8.056 \times 10^{-1}) = 1.242 \times 10^{-4}$

e. $245 + 134 - 45 = 3.34 \times 10^2$

f. $(3.33 \times 10^1) - (6.689 \times 10^5) + (9.12 \times 10^3) = -6.597 \times 10^5$

g. $\frac{(4.5 \times 10^{-3})(7.8 \times 10^4)(1.32 \times 10^{11})}{(5.55 \times 10^{-4})(1.55 \times 10^{-3})(8.3 \times 10^7)} = 6.49 \times 10^{11}$

h. $\frac{(1.15 \times 10^{11})(6.88 \times 10^{-3})(9 \times 10^{-3})}{(2.56 \times 10^7)(7 \times 10^4)(9.2 \times 10^{-4})} = 4.32 \times 10^{-3}$