

1. Rewrite each number in scientific notation so that it has the same number of significant figures as it started with.

0.000480 _____	0.08 _____	308.00 _____
980 _____	0.00000600 _____	4345000 _____
94000. _____	0.0220 _____	0.1900 _____

2. Perform the following operations, and then report the answer to the correct number of significant figures. Use scientific notation only when necessary for expressing the correct number of significant figures.

Calculator Answer: Correct sig. fig. answer:

126.2 + 4.41	130.61	_____
146.72 * 7.96	1167.8912	_____
364.8 / 4.56	80	_____
36480 / 4.56	8000	_____
230.2 - 7.2	223	_____
14.181 - 3.12	11.061	_____
14.181 + 3.12	17.301	_____
14.18 / 13.21	_____	_____
14.18 * 13.21	_____	_____
3.42 - 2.62	_____	_____
12621 / 42.07	_____	_____
62100 / 1.5525	_____	_____
4.00 * 3500.	_____	_____

3. Round or rewrite the given number so that it has 3 sig. figs., and so it has 2 sig. figs.

Use scientific notation only when necessary for expressing the correct number of significant figures.

Number	with 3 s.f. _____	with 2 s.f. _____
80000	_____	_____
0.0031833	_____	_____
729.12812	_____	_____
71000	_____	_____
30401	_____	_____
3333.33	_____	_____
3300.00	_____	_____
6.1819	_____	_____
60	_____	_____
60001	_____	_____
0.01898	_____	_____

4a. How many protons, neutrons, and electrons are in each of these?

(If no mass is given, assume it is the most common isotope)

$^{84}\text{Rb}^{+1}$	p _____ n _____ e _____	As^{-3}	p _____ n _____ e _____
Mn^{+2}	p _____ n _____ e _____	^{210}Po	p _____ n _____ e _____
^{63}Cu	p _____ n _____ e _____		

b. Which of the above formulas were atoms? _____ and which were ions? _____

5a. For each atom shown below, indicate how many electrons it will gain or lose when it forms an ion, and write the formula of the ion it will form (including the charge).

(You should be able to do this problem **without looking at your blue ion sheet**.)

You'll need to use a periodic table like the one on the classroom wall.)

Atom	Electron change	Ion Symbol	Atom	Electron change	Ion Symbol
S	_____	_____	N	_____	_____
Br	_____	_____	K	_____	_____
Ca	_____	_____	Mg	_____	_____
Y	_____	_____	O	_____	_____
Li	_____	_____			

5b. For the N atom:

How many protons are in the atom? _____

How many electrons are in the atom? _____

For the ION that N forms:

How many protons are in the ion? _____

How many electrons are in the ion? _____

5c. For the K atom:

How many protons are in the atom? _____

How many electrons are in the atom? _____

For the ION that K forms:

How many protons are in the ion? _____

How many electrons are in the ion? _____

6. For each compound below:

Classify the compound as ionic (I) or covalent (C).

Write the name of the compound (if given the formula), or the formula of the compound (if given the name).

Li₂S _____

IF _____

Br₂S _____

NaF _____

MgCO₃ _____

Mg₃P₂ _____

CuCO₃ _____

Sn₃P₂ _____

aluminum fluoride _____

Sn₃P₄ _____

aluminum sulfate _____

B₃F₄ _____

zinc nitrate _____

manganese II oxide _____

Nickel II phosphate _____

manganese III oxide _____

sulfur tetrafluoride _____

manganese IV carbonate _____

diphosphorus decoxide _____

ferric oxalate _____

phosphorus pentachloride _____

potassium sulfite _____

chromium V sulfide _____

7a. For the compound Sn₃P₂,

Does the Sn need to *gain, lose, or share* electrons in order to form the compound? _____

Does the P need to *gain, lose, or share* electrons in order to form the compound? _____

7b. For the compound B₃F₄,

Does the B need to *gain, lose, or share* electrons in order to form the compound? _____

Does the F need to *gain, lose, or share* electrons in order to form the compound? _____