



9. Answers are:
- empirical
 - molecular; $(\text{CH}_2)(\text{OH})$
 - empirical
 - molecular; $\text{C}_5\text{H}_4\text{O}_2$

10. Answers are:
- N_4O_6 ; **tetranitrogen hexoxide**
 - SiO_2 ; **silicon dioxide**
 - S_2F_{10} ; **disulfur decafluoride**
 - SbCl_5 ; **antimony pentachloride**

11. Answers are:
- $\text{NaC}_2\text{H}_3\text{O}_2$
 - $\text{Al}(\text{OH})_3$
 - MgSO_4
 - NH_4NO_3
 - CaF_2

12. Answers are:

- $22.99 \text{ amu} + 16.00 \text{ amu} + 1.01 \text{ amu} = 40.00 \text{ amu}$
- $24.31 \text{ amu} + 32.07 \text{ amu} + 4(16.00 \text{ amu}) = 120.38 \text{ amu}$
- $9(12.01 \text{ amu}) + 8(1.01 \text{ amu}) + 4(16.00 \text{ amu}) = 180.17 \text{ amu}$
- $40.08 \text{ amu} + 2(2)(1.01 \text{ amu}) + (2)(30.97 \text{ amu}) + (2)(4)(16.00 \text{ amu}) = 234.06 \text{ amu}$
- $40.08 \text{ amu} + (2)(35.45 \text{ amu}) + (6)(2)(1.01 \text{ amu}) + (6)(16.00 \text{ amu}) = 219.10 \text{ amu}$

13. Answers are:

- sodium hydroxide
- magnesium sulfate
- calcium dihydrogen phosphate**

Applying your knowledge

1. Answers are:

Chemical formula of compound	Oxidation number for positive ion	Oxidation number for negative ion
SiO_2	4+	2-
PBr_3	3+	1-
FeCl_3	3+	1-
CuF_2	2+	1-
N_2O_3	3+	2-
P_2O_5	5+	2-

2. Answers are:

- No. The formula mass of the compounds is 58.5 amu for NaCl and 102 amu for Al_2O_3 . The mass of Avogadro's number of these molecules is 58.5 g and 102 g, respectively.
- You would use a balance to obtain 58.5 g of NaCl and 102 g of Al_2O_3 .
- The atoms that make up each molecule have different formula masses.