

AP Diagnostic Quiz -No electronics

- Give the charge of the following elements when they are found in their typical ion form:
 - oxygen _____
 - nitrogen _____
 - calcium _____
 - aluminum _____
 - zinc _____
 - silver _____
- Give the name or the formulas for the following polyatomic ions:
 - PO_4^{3-} _____
 - hydroxide _____
 - SO_4^{2-} _____
 - SO_3^{2-} _____
 - $\text{C}_2\text{H}_3\text{O}_2^-$ _____
 - nitrate _____
 - nitrite _____
 - cyanide _____
 - MnO_4^- _____
 - ammonium _____
- How many significant figures are found in the following numbers?
 - 0.000200 _____
 - 1.000200 _____
 - 2 _____
 - 2.0 _____
- Answer the following problems with the correct number of sig figs.
 - $4 \times 3 =$ _____
 - $5.00 \times 10^4 \times 2.00 \times 10^3 =$ _____
 - $4.00 / 0.5000 =$ _____
 - $26.8 - 3.8 =$ _____
- Give the electron configuration and number of valence electrons of the following elements:
 - oxygen _____
 - calcium _____
- What is the formula weight of $\text{Cr}_2(\text{CO}_3)_3$? _____
- How many moles are in 29.4 g of sodium chloride? _____
- Write out the following balanced equation in symbols including the proper phase notation:

Hydrochloric acid reacts with zinc to form hydrogen gas and zinc chloride
- Name all of the diatomic elements. Name the other polyatomic elements.
- Balance the following equation: $\text{C}_8\text{H}_{18(l)} + \text{O}_{2(g)} \rightarrow \text{CO}_{2(g)} + \text{H}_2\text{O}_{(g)}$
- What type of reaction is the equation in number 10? _____
- Write the equilibrium expression.
- Using the equation found in #10, how many moles of oxygen are needed to produce 32 moles of carbon dioxide gas? _____
- What physical observations would you record in the reaction in number 8?
- Draw the Lewis Structure for the molecule COCl_2 .
- Compare and contrast between the fluorine atom, molecule and ion. Name the ion.