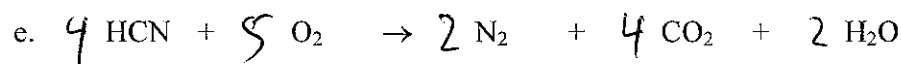
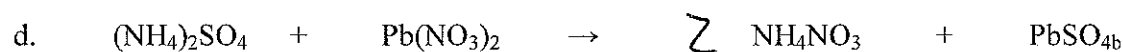
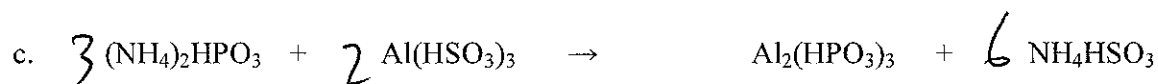
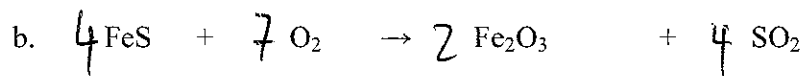
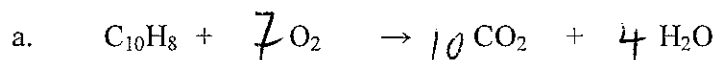
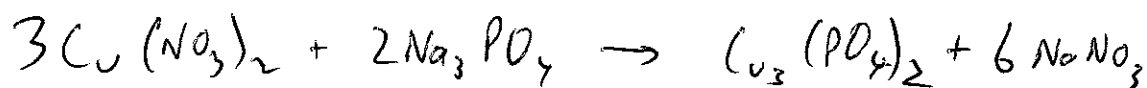


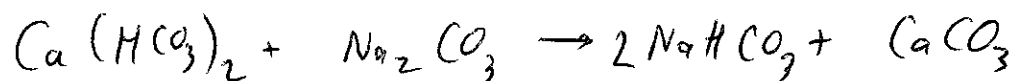
1. Balance the following equations:



f. Copper (II) nitrate and sodium phosphate react to form copper (II) phosphate and sodium nitrate. Translate into a formula equation and balance.



g. Calcium bicarbonate and sodium carbonate combine to form sodium bicarbonate and calcium carbonate.



h. Naphthalene ( $C_{10}H_8$ ) burns in oxygen gas to form carbon dioxide and water.



i. Phosphorus combines with oxygen gas to form diphosphorus pentoxide.



2. What is the mass of 15 moles of ammonium hyposulfite?  $(\text{NH}_4)_2\text{S}_2\text{O}_8$   
molar mass =  $(14.01 \times 2) + (1.008 \times 8) + 32.07 + (16.00 \times 2)$

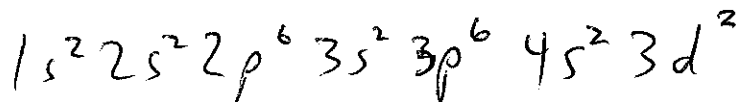
3. How many oxygen atoms are  $4.03 \times 10^{21}$  molecules of potassium permanganate?  
 $\text{KMnO}_4$

$$4.03 \times 10^{21} \text{ molecules} \left( \frac{4 \text{ atoms O}}{1 \text{ molecule}} \right) = 1.61 \times 10^{22} \text{ atoms O}$$

4. How many oxygen atoms are in  $4.03 \times 10^{21}$  moles of sodium chlorate?  $\text{NaClO}_3$

$$4.03 \times 10^{21} \text{ moles NaClO}_3 \left( \frac{6.022 \times 10^{23} \text{ molecules}}{1 \text{ mole}} \right) \left( \frac{3 \text{ atoms O}}{1 \text{ molecule}} \right) = 7.28 \times 10^{45} \text{ atoms O}$$

5. For the element, titanium, write the complete electron configuration and state the number of valence electrons.



2 valence  $e^-$

6. Write the isotopic symbol for an atom that contains 12 protons, 10 electrons, and 16 neutrons. What is the name of this element?

