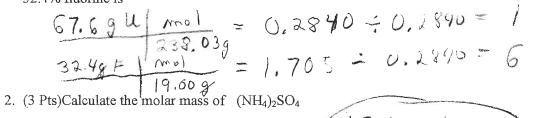
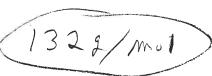
## Quiz 2b 100 Pts Fall 2014 Name: CHM151

Show all work to receive credit. Molar mass: N 14.01, H 1.01, F 19.00 C 12.01, S 32.07, Br 79.90, U 238.03

1. (3 Pts) The empirical formula of a compound of uranium and fluorine that is composed of 67.6% uranium and 32.4% fluorine is





3. (3 Pts) How many moles of NH<sub>3</sub> are there in 77.5 g of NH<sub>3</sub>?

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4. (3 Pts) A compound with an empirical formula of C<sub>2</sub>H<sub>4</sub>Br has a molar mass of 215.90 g/mol. What is the molecular formula?

5. (4 Pts) An organic thiol compound is 38.66% C, 9.73% H, and 51.61% S by mass. What is the empirical formula

of this compound?  
C: 
$$\frac{38.669}{12.019} = 3.219 \div 1.61 = 2$$
  
H:  $\frac{9.739}{1.019} = 9.63 \div 1.61 = 6$   $C_2H_65$   
S:  $\frac{51.619}{32.079} = 1.61 \div 1.61 = 1$ 

6. (3 Pts) How many moles of sodium nitrate would be produced from the complete reaction of 3.00 moles of lead

| itrate? | $2 \text{ NaCl} + \text{Pb}(\text{NO}_3)_2 \rightarrow 2 \text{ NaNO}_3 + \text{PbCl}_2$ | The state of the s |
|---------|--|--|
| 3.00    | mod PE(NO) 2 mol Na No,  | = (6.00 Mail Na 110)   |

7. (4 Pts) Complete the following chart, in order from left to right

| Isotope         | Mass Number | Protons | Neutrons | Electrons |
|-----------------|-------------|---------|----------|-----------|
| <sup>14</sup> N | 14          | 7       | 7        | 7         |
| K-40            | 40          | 19      | 21       | 19        |

8. (2 Pts) Complete the following chart, in order from left to right

| Ion                   | Mass Number | Protons | Neutrons | Electrons |
|-----------------------|-------------|---------|----------|-----------|
| $^{40}\text{Ca}^{2+}$ | 40          | 20      | 20       | 18        |