**Chem 1013: mini-quiz # 14: molecular formula and % composition A 4 pts March 9**

Your name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A compound containing 48 g S and 48 g O has a molecular weight of 256 g/mol. What is the molecular

formula for the compound SxOy ?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| element | w=mass,g | GAW (g/mol) |  |  |
| S |  | 32 |  |  |
| O |  | 16 |  |  |

Molecular formula for SxOy: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2 pts)

2. A 128 gram sample of pure S, a yellow powder, is burned in oxygen to produce 256 g of a horrible

smelling gas, SOx. Given that the atomic mass of S = 32 g/mol and the atomic mass of O=16 g/mol

what is the empiric formula for SOx, e.g., what is x ?

Formula for SOx = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2 pts)

**Chem 1013: mini-quiz # 14: molecular formula and % composition B 4 pts March 9**

Your name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A compound containing 42 g N and 32 g O has a molecular weight of 296 g/mol. What is the

**molecular formula** for the compound NxOy ?

|  |  |  |  |
| --- | --- | --- | --- |
| element | w=mass,g | GAW (g/mol) |  |
| N |  | 14 |  |
| O |  | 16 |  |

Molecular formula for NxOy: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2 pts)

2. A 153 gram sample of pure V (vanadium), a dull grey powder, is burned with sulfur S, a yellow powder to produce 345 g of a shiny red compound VSx. Given that the atomic mass of V = 51 g/mol and the atomic mass of S=32 g/mol what is the empiric formula for VSx, e.g., what is x ?

Formula for VSx = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2 pts)