

PQ Mass – Moles – Conversion

1. Calculate the molar mass of the following

a. CuO

$$63 + 16 = 79 \text{ g/mol}$$

b. Copper (I) Oxide

$$\text{Cu}_2\text{O} \quad 63(2) + 16 = 142 \text{ g/mol}$$

c. Nitrogen dioxide

$$\text{NO}_2 \quad 14 + 32 = 46 \text{ g/mol}$$

d. $\text{Ca}_3(\text{PO}_4)_2$

$$3(40) = 120 \quad \text{PO}_4 \quad 31 + 64 = 95(2) = 190 \quad 120 + 190 = 310 \text{ g/mol}$$

2. You have 100 grams of AgNO_3

a. Do you have more or less than 1 mole?

$$\text{AgNO}_3 \quad 169 \text{ g/mol}$$

less

b. Do you have more or less than 0.5 mole?

$$\uparrow 1 \text{ mol}$$

more

Factor Label required with units on all numbers.

3. Calculate the moles of Carbon dioxide in a 50-gram sample.

$$\text{CO}_2 = 44 \text{ g/mol}$$

$$\frac{50 \text{ g}}{44 \text{ g}} \times 1 \text{ mol} = 1.13 \text{ mol}$$

4. If you have 2.5 moles of O_2 , how many grams do you have?

$$\frac{2.5 \text{ mol}}{1 \text{ mol}} \times 32 \text{ g} = 80 \text{ g}$$

5. You measure out 50g of copper metal, how many moles and atoms of Copper are present in your sample.

$$\frac{50 \text{ g Cu}}{63.5 \text{ g}} \times 1 \text{ mol} = 0.78 \text{ mol}$$