

Name : _____ Date : _____

Computing Formula Mass

1. Determine the molar mass for the following elements.



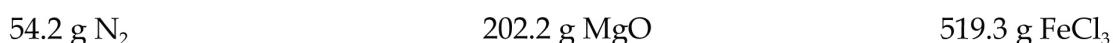
2. Determine the molar mass for the following molecules/compounds.



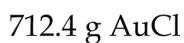
3. Determine the mass of the following samples.



4. Determine the number of moles in the following samples.



5. Determine how many atoms/molecules are in the following samples.



Name : _____ Date : _____

Computing Formula Mass

Answers

1. Determine the molar mass for the following elements.

$$\text{Ca} \quad 40.08 \text{ g}$$

$$\text{Xe} \quad 131.29 \text{ g}$$

$$\text{K} \quad 39.10 \text{ g}$$

$$\text{Fe} \quad 55.85 \text{ g}$$

$$\text{Au} \quad 196.97 \text{ g}$$

$$\text{O} \quad 16.00 \text{ g}$$

2. Determine the molar mass for the following molecules/compounds.



$$22.99 + 35.45 = 58.44 \text{ g}$$



$$2(1.01) + 16.00 = 18.02 \text{ g}$$



$$2(16.00) = 32.00 \text{ g}$$



$$2(55.85) + 3(16.00) = 159.70 \text{ g}$$



$$2(22.99) + 16.00 = 61.98 \text{ g}$$



$$2(35.45) = 70.90 \text{ g}$$

3. Determine the mass of the following samples.



$$2 \text{ mol} \times 58.93 \text{ g/mol}$$

$$= 117.86 \text{ g}$$



$$5 \text{ mol} \times 2.02 \text{ g/mol}$$

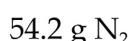
$$= 10.10 \text{ g}$$



$$2.1 \text{ mol} \times 18.02 \text{ g/mol}$$

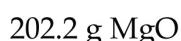
$$= 37.84 \text{ g}$$

4. Determine the number of moles in the following samples.



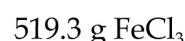
$$= 54.2 \text{ g} \times (1 \text{ mol N}/28.02 \text{ g})$$

$$= 1.93 \text{ mol}$$



$$= 202.2 \text{ g} \times (1 \text{ mol}/40.31 \text{ g})$$

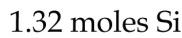
$$= 5.02 \text{ mol}$$



$$= 519.3 \text{ g} \times (1 \text{ mol}/162.20 \text{ g})$$

$$= 3.2 \text{ mol}$$

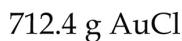
5. Determine how many atoms/molecules are in the following samples.



$$1.32 \text{ mol} \times 6.022 \times 10^{23} \text{ atoms/mol} = 7.95 \times 10^{23} \text{ atoms}$$



$$7.29 \text{ mol} = 6.022 \times 10^{23} \text{ molecules/mol} = 4.39 \times 10^{24} \text{ molecules}$$



$$712.4 \text{ g} \times (1 \text{ mol}/232.42 \text{ g}) \times (6.022 \times 10^{23} \text{ molecules/mol}) = 1.85 \times 10^{24} \text{ molecules}$$