Name : _____ Date : _____

Computing Formula Mass

1. Determine the molar mass for the following elements.

Ca	Xe	K
Fe	Au	O

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

NaCl	H_2O	O_2
Fe_2O_3	Na_2O	Cl_2

3. Determine the mass of the following samples.

2 moles Co	5 moles H_2	2.1 moles H_2O

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

54.2 g N_2	202.2 g MgO	519.3 g $FeCl_3$

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

1.32 moles Si

7.29 mol CO

712.4 g AuCl

Name : _____ Date : _____

Computing Formula Mass

Answers

1. Determine the molar mass for the following elements.

Ca	40.08 g	Xe	131.29 g	K	39.10 g
Fe	55.85 g	Au	196.97 g	O	16.00 g

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

NaCl	H_2O	O_2
22.99 + 35.45 = 58.44 g	2(1.01) + 16.00 = 18.02 g	2(16.00) = 32.00 g
Fe_2O_3	Na_2O	Cl_2
2(55.85) + 3(16.00) = 159.70 g	2(22.99) + 16.00 = 61.98 g	2(35.45) = 70.90 g

3. Determine the mass of the following samples.

2 moles Co	5 moles H_2	2.1 moles H_2O
2 mol x 58.93 g/mol	5 mol x 2.02 g/mol	2.1 mol x 18.02 g/mol
= 117.86 g	= 10.10 g	= 37.84 g

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

54.2 g N_2	202.2 g MgO	519.3 g $FeCl_3$
= 54.2 g x (1 mol N/28.02 g)	= 202.2 g x (1 mol/40.31 g)	= 519.3 g x (1 mol/162.20 g)
= 1.93 mol	= 5.02 mol	= 3.2 mol

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

1.32 moles Si

1.32 mol x 6.022×10^{23} atoms/mol = 7.95×10^{23} atoms

7.29 mol CO

7.29 mol = 6.022×10^{23} molecules/mol = 4.39×10^{24} molecules

712.4 g AuCl

712.4 g x (1 mol/232.42 g) x (6.022×10^{23} molecules/mol) = 1.85×10^{24} molecules