

## Ch. 6 Review

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1. Compound = 316.0g H = 3.740g, Cl = 132.8g, O = 179.5g

$$\% \text{H} = \frac{3.740}{316.0} \times 100 = 1.18\%$$

$$\% \text{Cl} = \frac{132.8}{316.0} \times 100 = 42.02\%$$

$$\% \text{O} = \frac{179.5}{316.0} \times 100 = 56.80\%$$

100.00%

2. molar mass of  $\text{AgNO}_3 = 1 \text{Ag} + 1 \text{N} + 3 \text{O}$   
 $= 107.87 + 14.01 + 3(16)$   
 $= 169.88 \text{ g/mol}$

$$\% \text{Ag} = \frac{107.87}{169.88} \times 100 = 63.5\%$$

$$\% \text{N} = \frac{14.01}{169.88} \times 100 = 8.2\%$$

$$\% \text{O} = \frac{48}{169.88} \times 100 = 28.3\%$$

100.0%

3.

E	m	M	n	Ratio
Cr	68.4	52.0	$1.315 \div 1.315 = 1$	$1 \times 2 = 2$
O	31.6	16.0	$1.975 \div 1.315 = 1.5$	$1.5 \times 2 = 3$



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4. a)

E	m	M	n	Ratio
H	2.2	1.01	$2.1782/2.1782 = 1.0$	
C	26.7	12.01	$2.2231/2.1782 = 1.0$	
O	71.1	16.00	$4.444/2.1782 = 2.0$	

∴  $\text{HCO}_2$  is empirical formula

b) molar mass of  $\text{HCO}_2 = 1.01 + 12.01 + 2(16)$   
 $= 45.02$

(2)  $\frac{180.08}{45.02} = 4$

∴ molecular formula is  $\text{H}_4\text{C}_4\text{O}_8$

5. Molar mass of  $\text{NH}_2 = 14.01 + 2(1.01)$   
 $= 16.03 \text{ g/mol}$

(3)  $\frac{32.1}{16.03} = 2$  ∴ molecular formula is  $\text{N}_2\text{H}_4$

6/7.

Part	m	M	n	Ratio
$\text{CoCl}_2$	1.64	129.83	$0.012632/0.012632 = 1$	
$\text{H}_2\text{O}$	1.36	18.02	$0.075472/0.012632 = 6$	

$3.00\text{g} - 1.64\text{g} = 1.36\text{g}$   
 $\text{H}_2\text{O}$

∴ formula is  $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$

(4)