#1 $\dfrac{5.23\text{ g } Fe(NO_3)_2}{100.0\text{ cm}^3} \left| \dfrac{1000\text{ cm}^3}{1\text{ L}} \right| \dfrac{1\text{ mol } Fe(NO_3)_2}{179.8\text{g } Fe(NO_3)_2} = 0.291\text{ M } Fe(NO_3)_2$

#2 $\dfrac{8.55\text{ g } NH_4I}{150\text{ ml}} \left| \dfrac{1000\text{ ml}}{1\text{ L}} \right| \dfrac{1\text{ mol } NH_4I}{144.9\text{ g } NH_4I} = 0.39\text{ M } NH_4I$

#3 $\dfrac{9.94\text{ g } CoSO_4}{250\text{ cm}^3} \left| \dfrac{1000\text{ cm}^3}{1\text{ L}} \right| \dfrac{1\text{ mol } CoSO_4}{155.0\text{ g } CoSO_4} = 0.26\text{ M } CoSO_4$

#4 $\dfrac{44.3\text{ g } Pb(ClO_4)_2}{250\text{ cm}^3} \left| \dfrac{1000\text{ cm}^3}{1\text{ L}} \right| \dfrac{1\text{ mol } Pb(ClO_4)_2}{406.2\text{ g } Pb(ClO_4)_2} = 0.44\text{ M } Pb(ClO_4)_2$

#5 $\dfrac{1.00\text{ liter}}{} \left| \dfrac{3.00\text{ mol } NiCl_2}{1\text{ L}} \right| \dfrac{129.7\text{ g } NiCl_2}{1\text{ mol } NiCl_2} = 389\text{ g } NiCl_2$

#6 $\dfrac{250.0\ cm^3}{1000\ cm^3} \times \dfrac{1\ L}{1\ L} \times \dfrac{0.500\ mol\ CoCl_2}{1\ mol\ CoCl_2} \times \dfrac{6.02 \times 10^{23}\ CoCl_2}{1\ CoCl_2} \times \dfrac{2\ Cl}{1}$

$= 1.51 \times 10^{23}\ Cl$

#7 $\dfrac{500.0\ cm^3}{1000\ cm^3} \times \dfrac{1\ L}{1\ L} \times \dfrac{1.5\ mol\ AgF}{1} = 0.75\ mol\ AgF$

#8

$250\ g\ Cd(IO_3)_2 \times \dfrac{1\ mol\ Cd(IO_3)_2}{462.2\ g\ Cd(IO_3)_2} \times \dfrac{1\ L}{0.002\ mol\ Cd(IO_3)_2} \times \dfrac{1000\ ml}{1\ L}$

$= 3 \times 10^5\ ml\ Cd(IO_3)_2$

9.

$$\frac{1.67\text{ g Ce}}{} \left| \frac{1\text{ mol Ce}}{140.1\text{ g Ce}} \right. = \frac{0.0119\text{ mol Ce}}{0.0119\text{ mol Ce}} = 1$$

$$\frac{4.54\text{ g I}}{} \left| \frac{1\text{ mol I}}{127.0\text{ g I}} \right. = \frac{0.0358\text{ mol I}}{0.0119\text{ mol Ce}} = 3$$

CeI_3

10.

$$\frac{0.556\text{ g C}}{} \left| \frac{1\text{ mol C}}{12.0\text{ g C}} \right. = \frac{0.0463\text{ mol C}}{0.0463\text{ mol C}} = 1$$

$$\frac{0.0933\text{ g H}}{} \left| \frac{1\text{ mol H}}{1.01\text{ g H}} \right. = \frac{0.0933\text{ mol H}}{0.0463\text{ mol C}} = 2$$

CH_2

11.

$$\frac{68.8\text{ g C}}{12.0\text{ g C}} \times \frac{1\text{ mol C}}{} = \frac{5.73\text{ mol C}}{1.64\text{ mol O}} = 3.5 \times 2 = 7$$

$$\frac{4.95\text{ g H}}{1.01\text{ g H}} \times \frac{1\text{ mol H}}{} = \frac{4.90\text{ mol H}}{1.64\text{ mol O}} = 3 \times 2 = 6$$

$$\frac{26.2\text{ g O}}{16.0\text{ g O}} \times \frac{1\text{ mol O}}{} = \frac{1.64\text{ mol O}}{1.64\text{ mol O}} = 1 \times 2 = 2$$

$C_7H_6O_2$

12.

$$\frac{9.93\text{ g C}}{12.0\text{ g C}} \times \frac{1\text{ mol C}}{} = \frac{0.828\text{ mol C}}{0.828\text{ mol C}} = 1$$

$$\frac{58.6\text{ g Cl}}{35.5\text{ g Cl}} \times \frac{1\text{ mol Cl}}{} = \frac{1.651\text{ mol Cl}}{0.828\text{ mol C}} = 2$$

$$\frac{31.4\text{ g F}}{19.0\text{ g F}} \times \frac{1\text{ mol F}}{} = \frac{1.653\text{ mol F}}{0.828\text{ mol C}} = 2$$

CCl_2F_2