Sample problem B pg 84

#2

given: 0.375 mol K

? : g K

need:

$MM_K = \frac{39.10\,g}{1\,mole}$

3 sig figs | 4 sig figs

$$\frac{0.375\ mol\ K}{1} \left| \frac{39.10\,g\,K}{1\,mole\,K} \right. = \boxed{14.7\,g\,K}$$

#3

given: 0.0135 mol Na

? : g Na

need:

$MM_{Na} = \frac{23.00\,g}{1\,mole}$

3 sig figs | 4 sig fig

$$\frac{0.0135\ mol\ Na}{1} \left| \frac{23.00\,g\,Na}{1\,mole\,Na} \right. = \boxed{0.311\,g\,Na \text{ or } 3.11\times10^{-1}\,g\,Na}$$

Sample problem C pg 85

#2

given: 3.60×10^{-5} g Au

? moles Au

need:

$MM_{Au} = \frac{196.97\,g}{1\,mole}$

3 sig fig | 4 sig fig

$$\frac{3.60\times10^{-5}\,g\,Au}{1} \left| \frac{1\,mole\,Au}{196.97\,g\,Au} \right. = \boxed{1.83\times10^{-7}\,mol\,Au}$$

#3

given: 0.535 g Zn

? moles Zn

need:

$MM_{Zn} = \frac{65.41\,g}{1\,mole}$

3 sig fig | 4 sig fig

$$\frac{0.535\,g\,Zn}{1} \left| \frac{1\,mole\,Zn}{65.41\,g\,Zn} \right. = \boxed{8.18\times10^{-3}\,mole\,Zn}$$

practice problem D pg 86

#2

2500 atoms Sn

? moles Sn

1 mole Sn = 6.02×10^{23} atoms Sn

$$\frac{2500 \text{ atoms Sn}}{6.02 \times 10^{23} \text{ atom Sn}} \left| \frac{1 \text{ mole Sn}}{} \right. =$$

$$\boxed{4.15 \times 10^{-21} \text{ mole Sn}}$$

#3

2.75 mole Al

? atoms Al

1 mole Al = 6.02×10^{23} atom Al

$$\frac{2.75 \text{ mole Al}}{1 \text{ mole Al}} \left| \frac{6.02 \times 10^{23} \text{ atom Al}}{} \right.$$

$$\boxed{1.66 \times 10^{24} \text{ atom Al}}$$

practice problem E: pg 87

#2 4.00g S

? atom S

1 mole S = 6.02×10^{23} atom S

$MM_S = \frac{32.07 \text{ g}}{1 \text{ mole}}$

$$\frac{4.00 \text{ g S}}{32.07 \text{ g S}} \left| \frac{1 \text{ mole S}}{1 \text{ mole S}} \right| \frac{6.02 \times 10^{23} \text{ atom S}}{} =$$

$$\boxed{7.51 \times 10^{22} \text{ atom S}}$$

#3 this problem can be done, it 2 problems in one

① 9.0g Al → ? atoms of Al

② ? g Au ← atom of Au

atoms of Al = atoms of Au

$MM_{Al} = \frac{26.98 \text{ g}}{1 \text{ mol}}$

$MM_{Au} = \frac{196.97 \text{ g}}{1 \text{ mole}}$

1 mole = 6.02×10^{23} atoms Mm

① $$\frac{9.0 \text{ g Al}}{26.98 \text{ g Al}} \left| \frac{1 \text{ mole Al}}{1 \text{ mole Al}} \right| \frac{6.02 \times 10^{23} \text{ atoms Al}}{} =$$

$= 2.01 \times 10^{23}$ atom Al

② $$\frac{2.01 \times 10^{23} \text{ atom Au}}{6.02 \times 10^{23} \text{ atom Au}} \left| \frac{1 \text{ mole Au}}{1 \text{ mole Au}} \right| \frac{196.97 \text{ g Au}}{}$$

$$\boxed{65.8 \text{ g Au}}$$