p296 #10-13, 15 p 315 #48, 50-54, 72 Must show work for credit

10. 1 mole equals Avogadro's number (6.02×10^{23})

11. molar mass is the atomic mass in grams

12. add the atomic masses for the element together

13. 1.50×10^{23} molecules $NH_3 \times \frac{1 \text{ mol } NH_3}{6.02 \times 10^{23} \text{ molec } NH_3} =$ .249 mol NH_3

15. 1 Ca × 40.08 = 40.08
1 S × 32.07 = 32.07
4 O × 16.00 = 64.00
136.15g

48a. molecule b. formula unit c. molecule d atoms

50. have same amount since all 1 mole

51. ~~C_2H_6~~ C_2H_6 since it has more atoms in the formula

52a. 3.00 mol Sn × $\frac{6.02 \times 10^{23} \text{ atoms Sn}}{1 \text{ mol Sn}} =$ 1.81×10^{24} atoms Sn

b. .400 mol KCl × $\frac{6.02 \times 10^{23} \text{ form un KCl}}{1 \text{ mol KCl}} =$ 2.41×10^{23} form un KCl

c. 7.50 mol SO_2 × $\frac{6.02 \times 10^{23} \text{ molec } SO_2}{1 \text{ mol } SO_2} =$ 4.52×10^{24} molec SO_2

d. 4.80×10^{-3} mol NaI × $\frac{6.02 \times 10^{23} \text{ form un}}{1 \text{ mol NaI}} =$ 2.89×10^{21} form un NaI

53a. 3H × 1.01 = 3.03
1P × 30.97 = 30.97
4O × 16.00 = 64.00
98.00g

b. 2N × 14.01 = 28.02
~~N_2O~~ 30 × 16.00 = 48.00
76.02g

c. 1Ca × 40.08 = 40.08
1C × 12.01 = 12.01
3 O × 16.00 = 48.00
100.09g

d. 2N × 14.01 = 28.02
8H × 1.01 = 8.08
1S × 32.07 = 32.07
4O × 16.00 = 64.00
132.17g

e. 4C × 12.01 = 48.04
9H × 1.01 = 9.09
2O × 16.00 = 32.00
89.13g

f. 2Br × 79.90 = 159.80g

54a. 1Si × 28.09 = 28.09
2O × 16.00 = 32.00
60.09g

b. 2N × 14.01 g = 28.02g

54c. $1Fe \times 55.85 = 55.85$
$3O \times 16.00 = 46.00$
$3H \times 1.01 = 3.03$
$106.88g$

d. 58.93g

72a. one mole contains same # of particles each compound/element has a different # of atoms

b. a mole would be 6.02×10^{23} of the molecules

c. it would have 6.02×10^{23} of CO_2 molecules. There would be 3 time as many atoms