

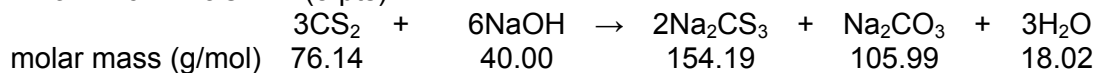
Quiz 5 – September 30, 2016

Complete the following problems. Write your final answers in the blanks provided. You must show your work to receive full credit. Show numerical answers to the correct number of significant figures with the correct units.

1. Your lab mate has prepared a dilute solution by pipetting 5.00 mL of a stock iron solution into a 100.0 mL volumetric flask and diluting it to the mark with water to prepare solution A. She then pipets 3.00 mL of solution A into a 50.0 mL volumetric flask and dilutes to the mark to prepare solution B. You measure the concentration of iron in solution B to be 0.000264 M. What was the iron concentration in the original stock solution? (8 pts)

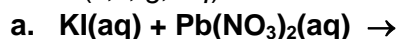
Answer _____

2. A side reaction in the manufacture of rayon from wood pulp is shown below. How many grams of Na_2CS_3 are produced from the reaction of 92.5 mL of liquid CS_2 (density = 12.6 g/mL) with 40.0 mL of 4.16 M NaOH? (8 pts)



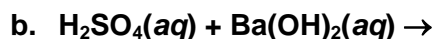
Answer _____

3. Write balanced overall reactions and net ionic equations for each of the following: Indicate the state (s, l, g, aq) of each of the reactants and products. (9 pts)



Balanced Reaction:

Net Ionic Equation:



Balanced Reaction:

Net Ionic Equation:



Balanced Reaction:

Net Ionic Equation:

1 1A																	18 8A
<div><div>1 H 1.00794</div><div>2 2A</div></div>																	<div><div>2 He 4.00260</div><div>10 Ne 20.1797</div></div>
<div><div>3 Li 6.941</div><div>4 Be 9.01218</div></div>																	<div><div>5 B 10.811</div><div>6 C 12.011</div><div>7 N 14.0067</div><div>8 O 15.9994</div><div>9 F 18.9984</div><div>10 Ne 20.1797</div></div>
<div><div>11 Na 22.9898</div><div>12 Mg 24.3050</div></div>	3 3B	4 4B	5 5B	6 6B	7 7B	8 8B		10 10B	11 11B	12 12B	<div><div>13 Al 26.9815</div><div>14 Si 28.0855</div><div>15 P 30.9738</div><div>16 S 32.066</div><div>17 Cl 35.4527</div><div>18 Ar 39.948</div></div>	18 Ar					
<div><div>19 K 39.0983</div><div>20 Ca 40.078</div></div>	21 Sc 44.9559	22 Ti 47.88	23 V 50.9415	24 Cr 51.9961	25 Mn 54.9381	26 Fe 55.847	27 Co 58.9332	28 Ni 58.693	29 Cu 63.546	30 Zn 65.39	<div><div>31 Ga 69.723</div><div>32 Ge 72.61</div><div>33 As 74.9216</div><div>34 Se 78.96</div><div>35 Br 79.904</div><div>36 Kr 83.80</div></div>	37 Rb 85.4678					
<div><div>37 Rb 85.4678</div><div>38 Sr 87.62</div></div>	39 Y 88.9059	40 Zr 91.224	41 Nb 92.9064	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 102.906	46 Pd 106.42	47 Ag 107.868	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.757	52 Te 127.60	53 I 126.904	54 Xe 131.29	
<div><div>55 Cs 132.905</div><div>56 Ba 137.327</div></div>	57 *La 138.906	72 Hf 178.49	73 Ta 180.948	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.22	78 Pt 195.08	79 Au 196.967	80 Hg 200.59	<div><div>81 Tl 204.383</div><div>82 Pb 207.2</div><div>83 Bi 208.980</div><div>84 Po (209)</div><div>85 At (210)</div><div>86 Rn (222)</div></div>	87 Fr (223)					
<div><div>87 Fr (223)</div><div>88 Ra 226.025</div></div>	89 †Ac 227.028	104 Rf (261)	105 Db (262)	106 Sg (266)	107 Bh (264)	108 Hs (277)	109 Mt (268)	110 Ds (271)	111 Rg (272)								
*Lanthanide series		58 Ce 140.115	59 Pr 140.908	60 Nd 144.24	61 Pm (145)	62 Sm 150.36	63 Eu 151.965	64 Gd 157.25	65 Tb 158.925	66 Dy 162.50	67 Ho 164.930	68 Er 167.26	69 Tm 168.934	70 Yb 173.04	71 Lu 174.967		
†Actinide series		90 Th 232.038	91 Pa 231.036	92 U 238.029	93 Np 237.048	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (262)		