

Quiz 3 – September 9, 2016

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

1. The two naturally occurring isotopes of nitrogen have masses of 14.0031 amu and 15.0001 amu. Determine the percentage of nitrogen -15 (^{15}N) in naturally occurring nitrogen (8 pts)

Answer _____

2. Complete the table below. (8 pts.)

Name	Symbol	# Protons	# Neutrons	# Electrons
chromium – 53		24		24
	^{52}Mg			
		11	12	10

3. How many atoms are present in a rectangular block of copper that is 22.0 mm long, 11.5 mm high and 4.3 mm wide? The density of copper is 8.92 g/cm^3 . (9 pts)

Answer _____

Possibly Useful Information

$\% \text{ by mass} = \frac{\text{g component}}{100 \text{ g sample}}$	$d = m/v$	$v = l \times w \times h$
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1 1A																	18 8A	
1 H 1.00794	2 2A																	2 He 4.00260
3 Li 6.941	4 Be 9.01218																	9 F 18.9984
11 Na 22.9898	12 Mg 24.3050	3 3B	4 4B	5 5B	6 6B	7 7B	8 8B	9	10	11	12	13 3A	14 4A	15 5A	16 6A	17 7A		
19 K 39.0983	20 Ca 40.078	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	31 Ga 69.723	32 Ge 72.61	33 As 74.9216	34 Se 78.96	35 Br 79.904		
37 Rb 85.4678	38 Sr 87.62	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		
55 Cs 132.905	56 Ba 137.327	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	81 Tl 204.383	82 Pb 207.2	83 Bi 208.980	84 Po (209)	85 At (210)		
87 Fr (223)	88 Ra 226.025	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																		
71 Lu 174.967																		
†Actinide series																		
103 Lr (262)																		

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