
Puzzle #1 (4 pts)

Fill in the missing numbers in the following table:

Chemical symbol	Atomic number	Number of protons	Number of neutrons	Number of electrons	Mass Number
	24		29	22	
$^{65}\text{Cu}^+$					
			52	38	93
$^{33}\text{S}^{2-}$					

Piece #1 (1/2 pt) – I have 360 eggs. How many dozen eggs do I have?

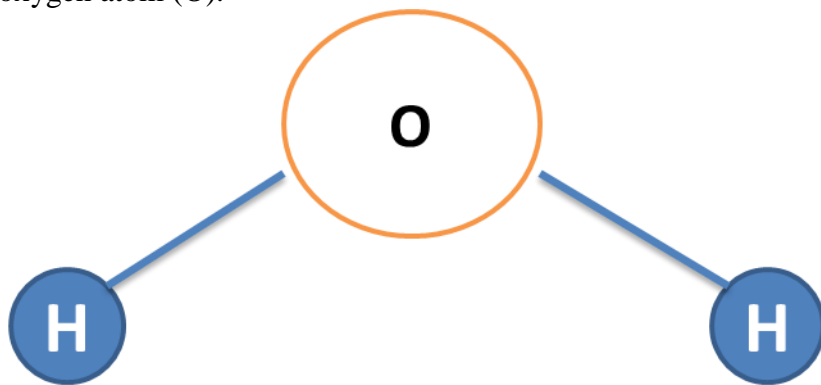
Piece #2 (1/2 pt) – Each egg has a mass of 45 g. What is the mass of a dozen eggs?

Piece #3 (1/2 pt) I have 896 g of eggs. How many dozen eggs do I have? How many individual eggs do I have?

Piece #4 (1/2 pt) 6.022×10^{23} anything make up 1 mole. I have 896 g of eggs. How many moles of eggs do I have?

Puzzle #2 (2 pts) Exactly 1 mole of magnesium atoms has a mass of 24.301 g. If I have 500.0 g of magnesium, how many moles of magnesium do I have?

Puzzle #3 (2 pt) Water is a molecule made by assembling 2 hydrogen atoms (H) and 1 oxygen atom (O).



I have 0.35 moles of water molecules.

A) How many moles of hydrogen atoms are there in my water?

B) How many moles of oxygen atoms are there in my water?

The Periodic Table of the Elements

1																	2
H Hydrogen 1.00794																	He Helium 4.003
3	4															9	10
Li Lithium 6.941	Be Beryllium 9.012182															F Fluorine 18.9984032	Ne Neon 20.1797
11	12															17	18
Na Sodium 22.989770	Mg Magnesium 24.3050															Cl Chlorine 35.4527	Ar Argon 39.948
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
K Potassium 39.0983	Ca Calcium 40.078	Sc Scandium 44.955910	Ti Titanium 47.867	V Vanadium 50.9415	Cr Chromium 51.9961	Mn Manganese 54.938049	Fe Iron 55.845	Co Cobalt 58.933200	Ni Nickel 58.6934	Cu Copper 63.546	Zn Zinc 65.39	Ga Gallium 69.723	Ge Germanium 72.61	As Arsenic 74.92160	Se Selenium 78.96	Br Bromine 79.904	Kr Krypton 83.80
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Rb Rubidium 85.4678	Sr Strontium 87.62	Y Yttrium 88.90585	Zr Zirconium 91.224	Nb Niobium 92.90638	Mo Molybdenum 95.94	Tc Technetium (98)	Ru Ruthenium 101.07	Rh Rhodium 102.90550	Pd Palladium 106.42	Ag Silver 107.8682	Cd Cadmium 112.411	In Indium 114.818	Sn Tin 118.710	Sb Antimony 121.760	Te Tellurium 127.60	I Iodine 126.90447	Xe Xenon 131.29
55	56	57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
Cs Cesium 132.90545	Ba Barium 137.327	La Lanthanum 138.9055	Hf Hafnium 178.49	Ta Tantalum 180.9479	W Tungsten 183.84	Re Rhenium 186.207	Os Osmium 190.23	Ir Iridium 192.217	Pt Platinum 195.078	Au Gold 196.96655	Hg Mercury 200.59	Tl Thallium 204.3833	Pb Lead 207.2	Bi Bismuth 208.98038	Po Polonium (209)	At Astatine (210)	Rn Radon (222)
87	88	89	104	105	106	107	108	109	110	111	112	113	114				
Fr Francium (223)	Ra Radium (226)	Ac Actinium (227)	Rf Rutherfordium (261)	Db Dubnium (262)	Sg Seaborgium (263)	Bh Bohrium (262)	Hs Hassium (265)	Mt Meitnerium (266)	(269)		(272)		(277)				
58	59	60	61	62	63	64	65	66	67	68	69	70	71				
Ce Cerium 140.116	Pr Praseodymium 140.90765	Nd Neodymium 144.24	Pm Promethium (145)	Sm Samarium 150.36	Eu Europium 151.964	Gd Gadolinium 157.25	Tb Terbium 158.92534	Dy Dysprosium 162.50	Ho Holmium 164.93032	Er Erbium 167.26	Tm Thulium 168.93421	Yb Ytterbium 173.04	Lu Lutetium 174.967				
90	91	92	93	94	95	96	97	98	99	100	101	102	103				
Th Thorium 232.0381	Pa Protactinium 231.03588	U Uranium 238.0289	Np Neptunium (237)	Pu Plutonium (244)	Am Americium (243)	Cm Curium (247)	Bk Berkelium (247)	Cf Californium (251)	Es Einsteinium (252)	Fm Fermium (257)	Md Mendelevium (258)	No Nobelium (259)	Lr Lawrencium (262)				