

Name _____ Period _____

College Prep Chemistry of the Earth

Assignment 5C – The Mol - Atomic and Molar Mass

20 Points

Answer the following questions based on the in class discussion

Define Mol	Define Avogadro's Number

Determine the atomic mass (amu), and molar mass (g/mol) for the following isotopes, and the average atomic mass (amu and g/mol) based on the periodic table.

Atomic Mass
= Molar Mass
(amu $\rightarrow$ g)

Isotope	Oxygen- <u>16</u>	Oxygen- <u>17</u>	Oxygen- <u>18</u>
Atomic Mass (amu)	16 amu	17 amu	18 amu
Molar Mass (g/mol)	16 g/mol	17 g/mol	18 g/mol
Avg Atomic Mass (g/mol, periodic table)	16.00 g/mol		

same #
diff. units

Isotope	Magnesium-24	Magnesium-25	Magnesium-26
Atomic Mass (amu)			
Molar Mass (g/mol)			
Avg Atomic Mass (g/mol, periodic table)			

Convert the following atom masses to number of particle (Avagadro's # = 6.022×10^{23} atoms/mol)

Isotope	mol atoms	X	Avagadro's Number (atoms/mol)	=	Number of Atoms (atoms)
Nitrogen-14	2.30 mol N	X	6.022×10^{23} atoms/mol	=	1.39×10^{24} atoms
Magnesium-24	2.30 mol Mg	X	6.022×10^{23} atoms/mol	=	1.39×10^{24} atoms
Titanium-48	1.27 mol Ti	X		=	
Selenium-80	6.27 mol Se	X		=	
Calcium-41	6.27 mol Ca	X		=	

rnd to
2 after

8
16.00