

### Mole Unit WS #4: Molar Conversions

A. Calculate the mass in grams for each of the following:

	Molar Mass (g/mole)	Mass (g)		Molar Mass (g/mole)	Mass (g)
1. 3.0 moles Na	23.0	69.0	8. 6.0 moles O <sub>2</sub>		
2. 2.5 moles Ca			9. 4.0 moles Al	27.0	108
3. 5.0 moles Mg	24.3	122	10. 3.0 moles H <sub>2</sub>		
4. 3.5 moles CaCO <sub>3</sub>			11. 2.0 moles H <sub>2</sub> SO <sub>4</sub>	98.0	196
5. 0.25 moles MgCl <sub>2</sub>	95.3	23.8	12. 5.0 moles KI		
6. 3.0 moles Al <sub>2</sub> O <sub>3</sub>			13. 1.5 moles Ca(OH) <sub>2</sub>	74	111
7. 0.5 moles Cl <sub>2</sub>	71.0	35.5	14. 0.5 moles Ca(NO <sub>3</sub> ) <sub>2</sub>		

B. Calculate the number of moles for each of the following:

	Molar Mass (g/mole)	Moles		Molar Mass (g/mole)	Moles
1. 200.0g F <sub>2</sub>	38	5.26	8. 150.0g Zn		
2. 25.0g Li			9. 160.0g Br	80.0	2.00
3. 60.0g Ne	20.0	3.00	10. 250.0g Fe		
4. 180.0g Ca			11. 32.0g SO <sub>2</sub>	64.0	.500
5. 200.0g NaOH	40.0	5.00	12. 10.0g Na <sub>2</sub> S		
6. 100.0g MgCO <sub>3</sub>			13. 60.0g K <sub>2</sub> SO <sub>4</sub>	174	.345
7. 50.0g ZnO	81.4	.614	14. 80.0g H <sub>2</sub> O <sub>2</sub>		

C. Calculate the number of atoms, molecules, or ions for each of the following:

	Mass	# of moles	# of atoms, molecules or ions
1.	28g N atoms	2.0 moles N atoms	1.204 × 10 <sup>24</sup> N atoms
2.		0.5 moles of H atoms	
3.	46.0 g Na <sup>+</sup> ions	2 mol Na <sup>+</sup> ion	1.204 × 10 <sup>24</sup> Na <sup>+</sup> ions
4.		3.0 moles F <sup>-</sup> ions	
5.	68.0 g H <sub>2</sub> S molecules	2.0 mol H <sub>2</sub> S	1.204 × 10 <sup>24</sup> molecules
6.	25.0 g S atoms		
7.	45.0 g of H <sub>2</sub> O molecules	2.5 mol H <sub>2</sub> O molecules	1.505 × 10 <sup>24</sup> molecules