

- 1) What kind of bonding is seen in these atom pairings? Na + Cl Fe + Ag H + N O + Cl
- 2) How many hydrogen atoms are found in each of the following compounds? H₂O NH₃ LiH

- 3) Identify the name and number of each atom in the following compounds:

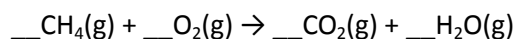
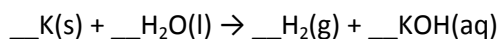
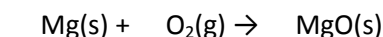
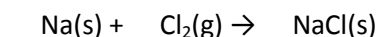


- 4) Write balanced ionic compound formulas in the pairings that follow:



- 5) State the law of conservation of matter.

- 6) Balance the following:



- 7) A mole is based upon the number of atoms found in exactly _____ of the isotope _____.

- 8) Find the number of moles in each sample:

$$3.5 \times 10^{24} \text{ atoms}$$

$$2.57 \times 10^{21} \text{ molecules}$$

$$7.447 \times 10^{23} \text{ ions}$$

$$1.00 \times 10^{27} \text{ atoms}$$

- 9) Complete the table below:

# of Moles	setup	# of Particles
4.57 mol Li		
		4.55×10^{25} molecules CO ₂
0.00500 mol Cu ²⁺		
3.5×10^4 mol F ₂		
		1.50×10^{23} molecules Al ₂ O ₃

- 10) Both mass and moles tell you the _____ of a sample being measured.

- 11) Mass is an amount that is compared to a _____.

- 12) Moles and molecules are not compared, they are _____ units.

13) Molecular Weight (Molar Mass) allows us to _____ by weighing.

14) Find the Molar Masses of the following: Na F₂ H₂O MgS CO₂ H₂SO₄ NO₃

15) To find the number of moles in a 10g sample of LiCl, you first must find the _____.

16) To find the number of grams in a 3.50 mole sample of H₂, you first must find the _____.

17) Complete the table below:

Starting Amount & Unit	Conversion Factor	Ending Amount & Unit
10.00 mol Ca		
35 g NH ₃		
0.250 mol C ₂ H ₆		
450. g PCl ₃		
6 x 10 ² g FePO ₄		

18) 1 mole of any gas occupies a volume of _____ L under standard conditions.

19) Standard temperature and pressure are abbreviated as _____.

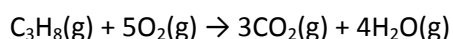
20) STP values in °C and atm are ___ & ___, respectively.

21) To find a mole ratio you must start with a _____.

22) A mole ratio compares _____ of two substances in a chemical reaction.

23) Mole ratios are conversion factors, meaning you can use them to _____.

24) Determine the ratios below using the following reaction:



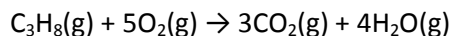
a) C₃H₈ to CO₂

b) CO₂ to H₂O

c) O₂ to C₃H₈

d) H₂O to O₂

25) Convert using the following reaction:



a) 3.00 mol C₃H₈ will produce _____ mol CO₂?

b) 8.0 mol H₂O are formed from _____ mol C₃H₈?

c) How many moles of O₂ are required to completely react with 0.500 moles of C₃H₈?

d) 3.00 moles of C₃H₈ will form how many grams of H₂O?

e) How many grams of O₂ are required to form 9.0 moles of CO₂?