Chem 1020
Mole conversions and stoichiometry worksheet

1. How many Ag atoms are in 2.43 mol Ag atoms?

2. How many Br_2 molecules are in 18.2 mol Br_2 molecules?

3. 7.53×10^{28} Al atoms is equal to how many mol Al atoms?

4. 2.932×10^{17} H_2O molecules is equal to how many mol H_2O molecules?

5. How many **mol** N atoms are in 8.3 mol HCN?

6. How many **mol** H atoms are in 2.63 mol CH_2O?

7. How many Cl atoms are in 3.63 mol CH_2Cl_2?

8. How many O atoms are in 6.229 mol $Ca(NO_3)_2$?

9. How many mol $FeCl_3$ are in 15.3 g $FeCl_3$?

10. How many mol Na_2CO_3 are in 23.5 g Na_2CO_3?

11. What mass is 3.52 mol $NaNO_3$?

12. What mass is 7.326 mol C_2H_4?

13. How many mol H atoms are in 18.2 g NH_3?

14. How many mol O atoms are in 3.52 g MnO_2?

15. How many S atoms are in 2.35 g Al_2S_3?

16. How many F atoms are in 5.52 g $C_2H_2F_4$?

17. What mass of O is in 7.56 g H_2O_2?

18. What mass of Cl is in 38.2 g PCl_3?

For the following 6 questions, consider the following balanced chemical equation:

$$N_2 + 3H_2 \rightarrow 2NH_3$$

19. How many mol NH_3 can be produced from 7.23 mol N_2 (assuming H_2 is in excess)?

20. How many mol H_2 must react with 3.26 mol N_2?

21. How many grams of N_2 must react if 25.0 g NH_3 are formed?

22. How many grams H_2 will react with 15.3 g N_2?

23. If 2.36 g N_2 and 1.52 g H_2 react together, what mass NH_3 can be produced? Which is the limiting reactant?

24. If 5.32 g N_2 and 15.8 g H_2 react together, what mass NH_3 can be produced? Which is the limiting reactant?

For the following 6 questions, consider the following balanced chemical equation:

$$2C_2H_2 + 5O_2 \rightarrow 4CO_2 + 2H_2O$$

25. How many mol of CO_2 can be formed if 8.26 mol C_2H_2 react (assuming excess O_2)?

26. How many mol C_2H_2 will react with 20.3 mol O_2?

27. How many g of H_2O can be formed if 36.2 g C_2H_2 react (assuming excess O_2)?

28. How many g O_2 will react with 12.2 g C_2H_2?

29. If 2.l3 g C_2H_2 and 3.63 g O_2 react, how many grams CO_2 can be formed? Which is the limiting reactant?

30. If 6.26 g C_2H_2 and 22.35 g O_2 react, how many grams H_2O can be formed? Which is the limiting reactant?