Name: _____   Period: _____

Mixed Mole Problems Worksheet

Directions:Solve the following problems. Be sure to show all your work

1. Find the number of moles if there are 7.63×10^{24} molecules of a substance.

2. How many moles of $CaCO_3$ are there in 2.00 kg of $CaCO_3$?

3. What is the mass of 8.42 moles of $(NH_4)_2S$?

4. Find the number of carbon atoms in 18.5 g of CH_3OH (methanol).

5. If one litre of a gas at STP has a mass of 3.17 g, what is the molar mass of this gas? Name the diatomic element that makes up this gas?

6. What volume at STP would 11.50 g of oxygen gas occupy?

7. What is the mass of 33.2 L of SO_2 gas at STP?

8. Calculate the molar mass of a gas at STP, if 360.0 mL of this gas has a mass of 0.680 g

9. Methane has the formula CH_4. Calculate the mass of 2.75 L of this gas at STP.

10. What is the mass of 5580.0 mL of nitrogen gas at STP?

11. How many atoms of bromine are there in 175.0 mL of bromine gas at STP?

12. How many molecules of CO_2 are there in 2.57 L of this gas at STP.

13. What is the molar mass of a substance if 4.60×10^{24} molecules have a mass of 226.9 g

14. How many atoms are there in 0.125 moles of Calcium phosphate?

15. How many atoms are there in 7.61 grams of arsenic?

16. How many nitrogen atoms are there in 0.310 moles of aluminum nitrate?

17. How many atoms are there in 7.65 g of Aluminum sulphate?

18. How many oxygen atoms are there in 18.00 g of Rubidium nitrate?

19. How many atoms are there in 3.65 mols of Calcium Sulphate?

20. How many hydrogen atoms are present in 182.3 g of Ammonium oxalate?

21. How many atoms of oxygen are in 925.0 mL of SO_3 gas at STP?

22. How many grams of oxygen in 780.0 mL of oxygen gas at STP?

23. How many molecules in 125.0 mL of NO_3 gas at STP?