

Name: \_\_\_\_\_

Period: \_\_\_\_\_

# Chemistry 11

## Moles and Volume at STP Worksheet

**Directions:** For gases at STP (273 K and 1 atm pressure), one mole occupies a volume of 22.4 L. What volume will the following quantities of gases occupy at STP?

1. 4.25 mole of  $H_2$  \_\_\_\_\_

2. 3.20 moles of  $O_2$  \_\_\_\_\_

3. 0.750 moles of  $CO_2$  \_\_\_\_\_

4. 1.75 moles of  $CO_2$  \_\_\_\_\_

5. 7.50 g of  $NH_3$  \_\_\_\_\_

6. 5.05 g of  $H_2$  \_\_\_\_\_

7. 100.0 g of  $O_2$  \_\_\_\_\_

8. 28.0 g of  $N_2$  \_\_\_\_\_

9. 60.00 g of  $CO_2$  \_\_\_\_\_

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10.  $9.65 \times 10^{24}$  molecules of  $\text{NH}_3$

\_\_\_\_\_

11.  $2.458 \times 10^{23}$  molecules of  $\text{N}_2$

\_\_\_\_\_

12.  $6.598 \times 10^{24}$  atoms of O (in  $\text{O}_2$  gas)

\_\_\_\_\_

13.  $7.526 \times 10^{25}$  molecules of  $\text{SO}_3$

\_\_\_\_\_

14.  $9.758 \times 10^{25}$  atoms in  $\text{N}_2\text{O}_5$

\_\_\_\_\_

15.  $6.758 \times 10^{26}$  atoms in  $\text{H}_2\text{SO}_4$

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16.  $6.789 \times 10^{26}$  oxygen atoms, in Sodium acetate

\_\_\_\_\_

17.  $7.62 \times 10^{28}$  hydrogen atoms in Magnesium Benzoate

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