

1. How many \_\_\_\_\_?
2. Calculate the molarity of the following solutions:
  - a. 3.5g of NaCl dissolved in water to make 250 mL of solution  

$$\frac{3.5 \text{ g} \cdot \frac{1 \text{ mol}}{58.44 \text{ g}}}{0.25 \text{ L}} = 0.02 \text{ M}$$
  - b. 2.5g of NaCl dissolved in water to make 100 mL of solution  

$$\frac{2.5 \text{ g} \cdot \frac{1 \text{ mol}}{58.44 \text{ g}}}{0.1 \text{ L}} = 0.04 \text{ M}$$
3. How many moles of  $\text{KClO}_3$  are in 250 mL of a 0.02 M solution?  

$$0.05 \text{ mol} = \frac{\text{mol}}{0.25 \text{ L}} \quad \text{mol} = \boxed{0.05 \text{ mol } \text{KClO}_3}$$
4. How many moles of  $\text{KClO}_3$  are in 25 mL of a 0.02 M solution?  

$$0.005 \text{ mol} = \frac{\text{mol}}{0.025 \text{ L}} \quad \text{mol} = \boxed{0.005 \text{ mol } \text{KClO}_3}$$
5. A reaction calls for the use of 1.00 mol of  $\text{KClO}_3$ . How many grams of  $\text{KClO}_3$  should you use?  

$$1.00 \text{ mol} = \frac{\text{g}}{122.55 \text{ g}} \quad \text{g} = 122.55 \text{ g} \quad \text{g} = \boxed{122.55 \text{ g}}$$
6. A reaction calls for the use of 0.25 mol of  $\text{KClO}_3$ . How many grams of  $\text{KClO}_3$  should you use?  

$$0.25 \text{ mol} = \frac{\text{g}}{122.55 \text{ g}} \quad \text{g} = 30.64 \text{ g} \quad \text{g} = \boxed{30.64 \text{ g}}$$
7. How many grams of  $\text{KClO}_3$  are in 250 mL of a 0.02 M solution? How many grams?  

$$0.05 \text{ mol} = \frac{\text{mol}}{0.25 \text{ L}} \quad \text{mol} = \frac{0.05 \text{ mol } \text{KClO}_3 \cdot 122.55 \text{ g}}{1 \text{ mol}} = \boxed{6.13 \text{ g}}$$
8. A reaction calls for the use of 0.05 mol of  $\text{KClO}_3$ . How many grams of  $\text{KClO}_3$  should you use?  

$$0.05 \text{ mol} = \frac{\text{mol}}{0.25 \text{ L}} \quad \text{mol} = \frac{0.05 \text{ mol } \text{KClO}_3 \cdot 122.55 \text{ g}}{1 \text{ mol}} = \boxed{6.13 \text{ g } \text{KClO}_3}$$