

Name: _____
Period: ____

Solution Concentration

$$C = \frac{n}{V} \quad n = CV \quad V = \frac{n}{C}$$

- (1) Calculate the concentration of a 1.5 L solution that contains 0.24 mol HCl.
- (2) Calculate the molarity of a 60 mL solution that contains 0.075 mol NH_4Cl .
- (3) How many moles of AlCl_3 are contained in 0.25 L of 0.35 M solution?
- (4) What is the volume of a 5.00 M solution of HNO_3 which contains 2.24 mol?
- (5) How many moles of $\text{Cu}(\text{NO}_3)_2$ are contained in 400 mL of 0.90 M solution?
- (6) What is the volume of 0.20 M solution of MgSO_4 which contains 0.015 mol?
- (7) Calculate the molarity of a 400 mL solution that contains 41.4 g of NaCl.
- (8) Calculate the concentration of a 5.00 L solution that contains 1.20×10^{24} molecules of NaOH.
- (9) What is the mass of KOH present in 200 mL of 2.0 M solution?
- (10) How many molecules of CoCl_3 are present in 3.6 L of 0.040 M solution?
- (11) Describe how to prepare 500 mL of 0.64 M acetic acid solution.
- (12) Describe how to prepare 3.25 L of 1.05 M sodium oxalate solution.

Answers:

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|---------------|--------------|---|
| (1) 0.16 M | (6) 0.075 L | (10) 8.7×10^{22} molecules |
| (2) 1.3 M | (7) 1.77 M | (11) 19 g acetic acid, add water up to 500 mL |
| (3) 0.088 mol | (8) 0.399 M | (12) 460 g sodium oxalate, add water up to 3.25 L |
| (4) 0.448 L | (9) 22 g KOH | |
| (5) 0.36 mol | | |