

Molarity Calculations

Example Solutions

1. $n = ?$ $n = CV$
 $C = 0.3 \text{ mol/L}$ $n = 0.3 \text{ mol/L} \times 3\text{L}$
 $V = 3\text{L}$ $n = 0.9 \text{ mol}$

2. $n = 3 \text{ mol}$ $C = \frac{n}{V}$ $C = 2 \text{ mol/L}$
 $C = ?$ $C = \frac{3 \text{ mol}}{1.5\text{L}}$ $C = 2 \text{ M}$
 $V = 1.5\text{L}$

3. $n = 5 \text{ mol}$ $V = \frac{n}{C}$ $V = 1.67\text{L}$
 $C = 3 \text{ mol/L}$ $V = \frac{5 \text{ mol}}{3 \text{ mol/L}}$
 $V = ?$

5. $C_s = 12.1 \text{ M}$ $V_s = \frac{C_o V_o}{C_s}$ $V_s = 0.00826 \text{ L}$
 $V_s =$ $V_s = \frac{0.1 \text{ M} \times 1\text{L}}{12.1 \text{ M}}$ $V_s = 8.260 \text{ mL}$
 $C_o = 0.1 \text{ M}$
 $V_o = 1\text{L}$

4. $n = ?$ $n = CV$
 $C = 2 \text{ mol/L}$ $n = 2 \text{ mol/L} \times 0.010\text{L}$
 $V = 10 \text{ mL} \rightarrow 0.010\text{L}$ $n = 0.02 \text{ mol}$

$0.02 \text{ mol NaCl} \times \frac{58.44 \text{ g NaCl}}{1 \text{ mol NaCl}} = 1.17 \text{ g NaCl}$