Molarity Worksheet ANSWERS

1. A student dissolves 4.0 g of NaCl in enough water to make 200 mL of solution. What is the mass/volume percent (m/v) of the NaCl solution?

$$\frac{4.0\,g}{200\,mL} \times 100 = 2.0\%$$

2. The concentration of lead in a water sample is 0.85 ppm. Convert this concentration to ppb.

$$0.85\,ppm \times 1000 = 850\,ppb$$

3. If 0.50 mol of KNO$_3$ is dissolved to make 2.0 L of solution, what is the molarity of the solution?

$$\frac{0.50\,mol}{2.0\,L} = 0.25\,M$$

4. How many liters of a 1.5 M NaOH solution are needed to obtain 0.75 mol of NaOH?

$$\frac{0.75\,mol}{1.5\,M} = 0.50\,L$$

5. What amount (in mol) of HCl is present in 250 mL of a 2.0 M solution?

$$2.0\,M \times 0.250\,L = 0.50\,mol$$

6. How many grams of CuSO$_4$ are needed to make 500 mL of a 0.200 M solution?

$$0.200\,M \times 0.500\,L = 0.100\,mol \quad 0.100\,mol \times 159.6\,g/mol = 15.96\,g$$