

Solution Calculations

1. Calculate the number of moles for a solution of concentration 0.1 mol l^{-1} and volume 30 cm^3 .

$$n = CV = \underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ moles}$$

2. 3 moles of a substance is dissolved in 50 cm^3 of water. What is the concentration of the solution?

$$C = \frac{n}{V} = \underline{\quad} = \underline{\quad} \text{ mol l}^{-1}$$

4. A solution of concentration 5 mol l^{-1} has 0.2 moles of a substance dissolved in it. What is the volume of the solution?

$$V = \frac{n}{C} = \underline{\quad} = \underline{\quad} \text{ litres} = \underline{\quad} \text{ cm}^3$$

5. Calculate the concentration of a solution which has a volume of 2000 cm^3 where 3.2 moles of a substance has been dissolved in water.

$$C = \frac{n}{V} = \underline{\quad} = \underline{\quad} \text{ mol l}^{-1}$$

6. Which has the greater concentration, a solution of 5 moles dissolved in 600 cm^3 of water or a solution of 6 moles dissolved in 700 cm^3 of water (*hint – use $C = \frac{n}{V}$ for each solution and compare the answers*)?

7. Which contains the greater number of moles, 40 cm^3 of a 0.3 mol l^{-1} solution or 2 litres of a 0.003 mol l^{-1} solution (*hint – use $n = CV$ for each solution and compare the answers*)?