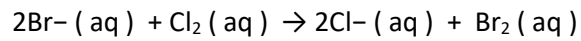


**Question 25:** Reaction,  $2\text{Br}^- (\text{aq}) + \text{Cl}_2 (\text{aq}) \rightarrow 2\text{Cl}^- (\text{aq}) + \text{Br}_2 (\text{aq})$ , is used for commercial preparation of bromine from its salts. Suppose we have 50 mL of a 0.60 M solution of NaBr. What volume of a 0.050 M solution of  $\text{Cl}_2$  is needed to react completely with the Br?

**ANSWER:** NO OPTION CORRECT ( ANSWER IS 30 mL)



$$M_1 V_{1(\text{Br}^-)} / n_1 = M_2 V_{2(\text{Cl}_2)} / n_2$$

(where,  $n_1$  and  $n_2$  are corresponding number of moles Of  $\text{Br}^-$  and  $\text{Cl}_2$  respectively)

$$20.06 \times 50 = 10.05 \times V_2$$

$$\therefore V_2 = 30\text{mL}$$