Answer on Question #62823 - Chemistry | General Chemistry

To what volume should you dilute 50.0 ml of a 12 M stock nitric acid solution to obtain a 0.100 M nitric acid solution?

Solution

$$C_1 \cdot V_1 = C_2 \cdot V_2, \text{ when}$$

C_1= 12 M

V_1= 50 ml

C_2= 0.100 M

$$V_2 = \frac{C_1 \cdot V_1}{C_2} = \frac{12\ M \cdot 50\ ml}{0.100\ M} = 6000\ ml = 6\ L$$

Answer

The volume must be diluted to 6 L.