Answer on Question #67032 - Chemistry -General Chemistry

In the laboratory you dilute 5.13 mL of a concentrated 3.00 M hydriodic acid solution to a total volume of 50.0 mL. What is the concentration of the dilute solution?

Solution:

$$n_1(\text{HI}) = n_2(\text{HI})$$

$$c_1(\text{HI}) \times V_1 = c_2(\text{HI}) \times V_2$$

$$c_2(\text{HI}) = \frac{c_1(\text{HI}) \times V_1}{V_2} = \frac{3.00 \times 5.13}{50.0} = 0.308 \text{ M}$$

Answer:
0.308 M.