A sample of hydrogen gas has an initial pressure of 2.86 atm and an initial volume of 847.2 mL. If the volume of the gas were decreased to 365.8 mL, what would the new pressure be?

Solution. The Boyle-Mariotte law:

$$pV = const \quad \longrightarrow \quad p_1V_1 = p_2V_2 \quad \longrightarrow \quad p_2 = \frac{p_1V_1}{V_2}$$

$$p_2 = \frac{2{,}86 \text{ atm} \cdot 847{,}2 \text{ mL}}{365{,}8 \text{ mL}} = 6{,}62 \text{ atm}$$

Answer: 6,62 atm

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