

Solutions

Each answer shows the steps, then the **result**.

2.1

- it halves (Boyle's law, PV constant at fixed T)

2.2

- $V = \frac{nRT}{P} = \frac{2.0 \times 8.31 \times 300}{1.0 \times 10^5} = 0.050 \text{ m}^3$

2.3

- low pressure; high temperature

3.1 A

3.2 B

3.3

(a)

- $\frac{P_1}{T_1} = \frac{P_2}{T_2} \Rightarrow P_2 = 2.0 \times 10^5 \times \frac{450}{300} = 3.0 \times 10^5 \text{ Pa}$

(b)

- the volume stays constant (the container is rigid)