

Answer on Question 74923 in General Chemistry.

$$V_0 = 9.10 \text{ L}$$

$$t_0 = 198^\circ \text{ C}$$

$$V_1 = 2.50 \text{ L}$$

$$P = \text{const}$$

$$t_1 = ?$$

According to the Gay-Lussak's law ( $p = \text{const}$ )

$$\frac{V_0}{T_0} = \frac{V_1}{T_1}$$

$$T_1 = \frac{T_0 \times V_1}{V_0} = \frac{471 \times 2.50}{9.10} = 129.4 \text{ K}$$

For solving the task we translate the  $198^\circ \text{ C}$  into K

$$T_0 = t + 273 = 198 + 273 = 471 \text{ K}$$

$$t_1 = T_1 - 273 = 129.4 - 273 = -143.6^\circ \text{ C}$$