

A.  $V = 117 \text{ mL}$  at  $652 \text{ mm Hg}$ ,  $V = 125 \text{ mL}$  at ??  $\text{mm Hg}$

$$(652)(117) = (P_2)(125)$$

$$\frac{(652)(117)}{125} = P_2 = 610.3 \text{ mm Hg}$$

B.  $V = 20.2 \text{ L}$  at  $1.02 \text{ atm}$ ,  $V = ??$  at  $2.04 \text{ atm}$

$$(1.02)(20.2) = (2.04)(V_2)$$

$$\frac{(1.02)(20.2)}{2.04} = V_2 = 10.1 \text{ Liters}$$

C.  $V = 64.2 \text{ mL}$  at  $755 \text{ torr}$ ,  $V = 1.0 \text{ L}$  at ??  $\text{mmHg}$

$$(755)(64.2) = P_2(1000) \quad 1.0 \text{ L} = 1000 \text{ mL}$$

$$\frac{(755)(64.2)}{1000} = P_2 = \frac{48.47 \text{ torr}}{1 \text{ torr}} \times \frac{1 \text{ mm Hg}}{1 \text{ torr}} = 48.47 \text{ mm Hg}$$

A.  $V = 19.3 \text{ L}$  at  $102.1 \text{ kPa}$ ,  $V = 10.0 \text{ L}$  at ??  $\text{kPa}$

$$(102.1)(19.3) = (P_2)(10.0)$$

$$\frac{(102.1)(19.3)}{10.0} = P_2 = 197.1 \text{ kPa}$$

B.  $V = 25.7 \text{ ml}$  at  $755 \text{ torr}$ ,  $V = ??$  at  $761 \text{ mm Hg}$

$$(755)(25.7) = (761)(V_2)$$

$$\frac{761 \text{ mmHg}}{1 \text{ mmHg}} = \frac{761 \text{ torr}}{1 \text{ torr}}$$

$$\frac{(755)(25.7)}{761} = V_2 = 25.5 \text{ mL}$$

C.  $V = 51.2 \text{ L}$  at  $1.05 \text{ atm}$ ,  $V = ??$  at  $112.2 \text{ kPa}$

$$(1.05)(51.2) = (1.11)(V_2)$$

$$\frac{112.2 \text{ kPa}}{101.325 \text{ kPa}} = \frac{1.11 \text{ atm}}{1.01325 \text{ atm}}$$

$$\frac{(1.05)(51.2)}{1.11} = V_2 = 48.43 \text{ Liters}$$

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A.  $V = 1.14 \text{ L}$  at  $21^\circ\text{C}$ ,  $V = ??$  at  $42^\circ\text{C}$   
 $\frac{+273}{294 \text{ K}} \quad \frac{+273}{315 \text{ K}}$

$$\frac{1.14}{294} = \frac{V_2}{315} \quad 315 \times \frac{1.14}{294} = V_2 = 1.22 \text{ L}$$

B.  $V = 257 \text{ mL}$  at  $45^\circ\text{C}$ ,  $V = 300 \text{ mL}$  at  $??^\circ\text{C}$

$$\frac{257}{318} = \frac{300}{T_2} \quad \frac{+273}{318 \text{ K}} \quad T_2 = \frac{300}{257} \times 318 - \frac{371.2 \text{ K} - 273}{98.2^\circ\text{C}}$$

C.  $V = 2.78 \text{ L}$  at  $-50^\circ\text{C}$ ,  $V = 5.00 \text{ L}$  at  $??^\circ\text{C}$

$$\frac{2.78}{223} = \frac{5.00}{T_2} \quad \frac{+273}{223 \text{ K}} \quad T_2 = \frac{5.00}{2.78} \times 223 \quad \frac{401.1 \text{ K} - 273}{128.1^\circ\text{C}}$$

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A. V = 25 mL at 25 °C, V = ?? at 0 °C,

$$\frac{25}{298} = \frac{V_2}{273} \quad 273 \times \frac{25}{298} = V_2 = 22.9 \text{ mL}$$

B. V = 10.2 L at 100 °C, V = ?? at 100 K

$$\frac{10.2}{373} = \frac{V_2}{100} \quad 100 \times \frac{10.2}{373} = V_2 = 2.73 \text{ Liters}$$

C. V = 551 mL at 75 °C, V = 1.00 mL at ?? °C

$$\frac{551}{348} = \frac{1.00}{T_2} \quad T_2 = \frac{1.00}{551} \times 348 \quad T_2 = .632 \text{ K}$$
$$\frac{.632}{-273} = \frac{-272.4^\circ\text{C}}{-273}$$