In a given process on an ideal gas, $dW = 0$ and $dQ < 0$. Then for the gas

(a) the temperature will decrease

(b) the volume will increase

(c) the pressure will remain constant

(d) the temperature will increase

5. (a) From the first law of thermodynamics
$$dQ = dU + dW$$
Here $dW = 0$ (given)
$$\therefore \quad dQ = dU$$
Now since $dQ < 0$ (given)
i.e., dQ is negative so dU decreases.
Internal energy 'U' decrease when temperature T decreases.