An ideal gas

An ideal gas has a gas constant $R = 0.3\ kJ/kg \cdot K$ and a constant volume specific heat $c_v = 0.7 kJ/kg \cdot K$. If the gas has a temperature change of 100 °C, what is the work done in kJ/kg?

Answer: Insufficient information to determine.

Explanation: The work done cannot be determined since there is no information on volume change or the pressure and it can neither be determined from the energy balance relation. This is because we do not know the exact process (path) of how temperature change was achieved, it could be constant volume, constant pressure. The work is path dependent, and it would be different for each of these scenarios.