A piston-cylinder device contains 1 kg of water. Initially, the water is at 200°C and 1000 kPa. The water is compressed in a reversible isothermal process until the water is a saturated liquid.

a) Sketch the process on P-V and T-s diagrams.
b) Find the heat transfer for the process, in kJ.
c) Find the work for the process, in kJ.

\[ Q_{1-2} = mT(D_2 - D_1) = (200 + 273)(2.3840 - 6.6940) = -2064 \text{ kJ} \]
FROM (1)

\[ W_{t_2} = m(U_2 - U_1) - R_{t_2} \]

\[ = (1 \text{ kg})(850.65 - 2621.9) \text{ J/kg} - (-2064) \text{ J/kg} \]

\[ = 292.8 \text{ J} \]