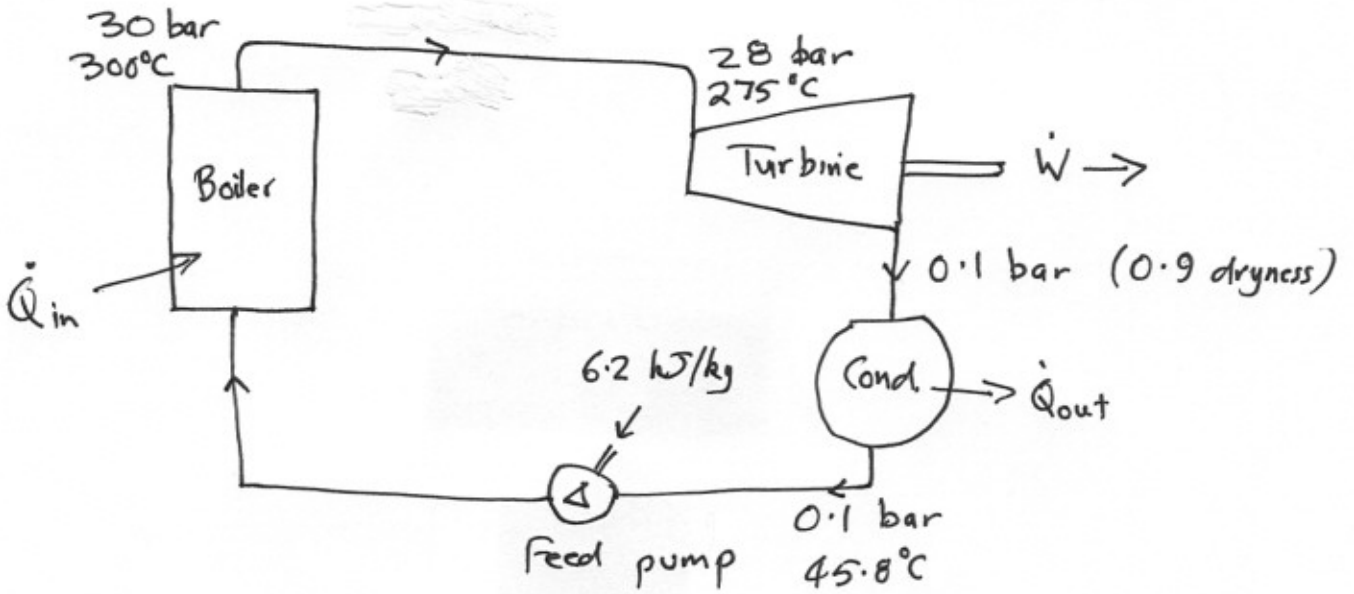

(a) h (300°C, 30 bar) $= \frac{3025+2962}{2} = 2993.5$ kJ/kg

h (275°C, 28 bar) given by:

$$\frac{2.8-2}{4-2} = \frac{h-2965}{2886-2965} \quad \therefore h = 2933.4 \text{ kJ/kg}$$

$\therefore$ Heat loss /kg $= 2993.5 - 2933.4 = \underline{60.1}$ kJ/kg

(b) $h_{\text{turbine exit}} = 191.8 + 0.9 \times 2392.9 = \underline{2345.4}$ kJ/kg

$\dot{w} = 2933.4 - 2345.4 = \underline{588}$ kJ/kg

(c) $\dot{q}_{out} = 2345.4 - h_{\text{cond exit}}$ (191·8 kJ/kg)

$= \underline{2153.6}$ kJ/kg

(d) $h_{\text{boiler inlet}} = h_{\text{cond exit}} + \Delta h_{\text{pump}}$

$= 191.8 + 6.2 = 198.0$ kJ/kg

$q_{in} = 2993.5 - 198.0$

$= \underline{2795.5}$ kJ/kg