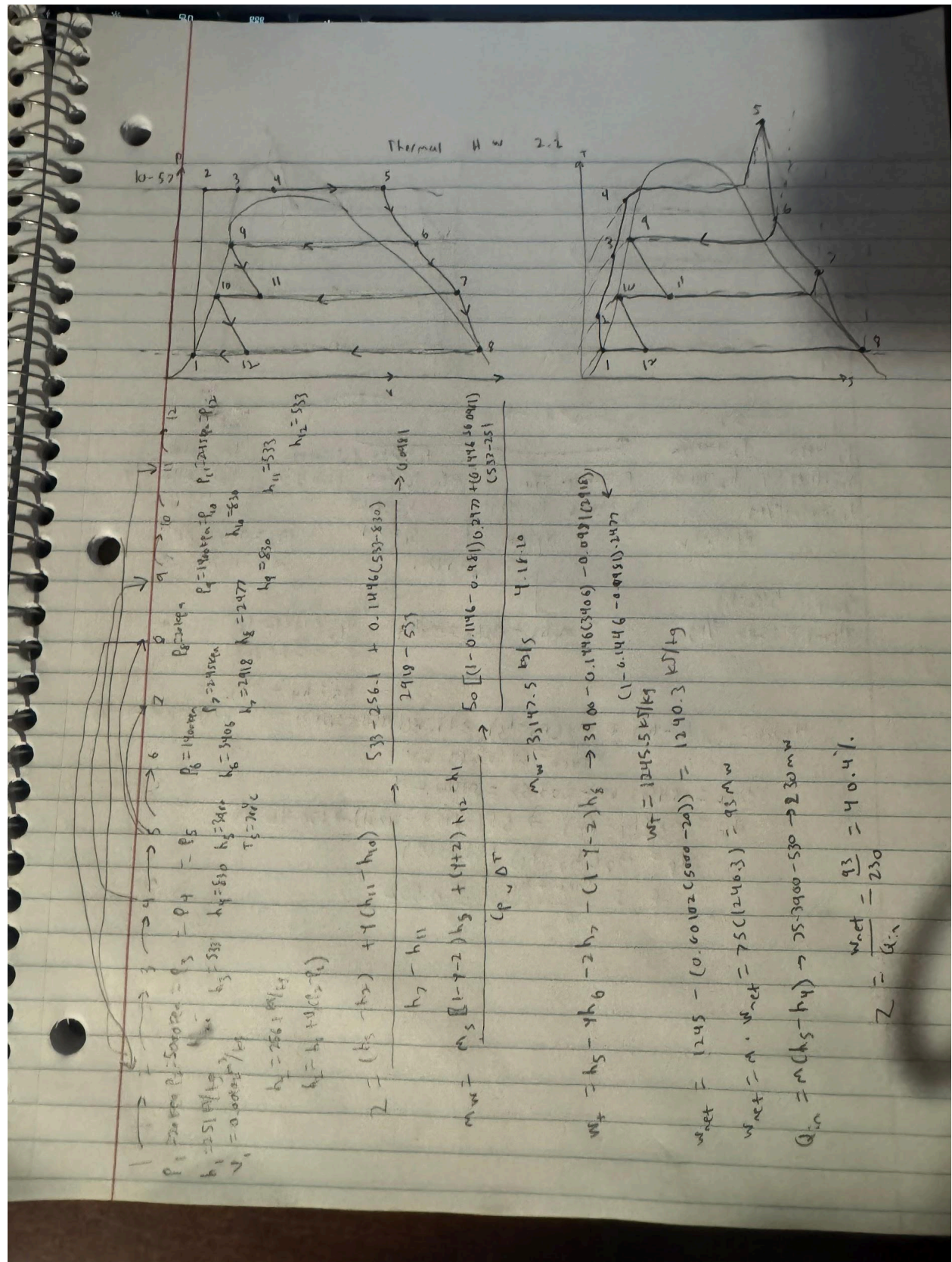
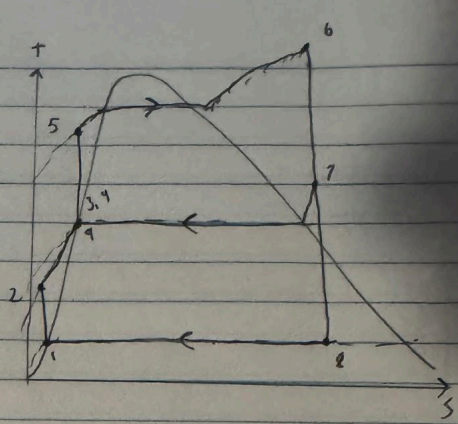




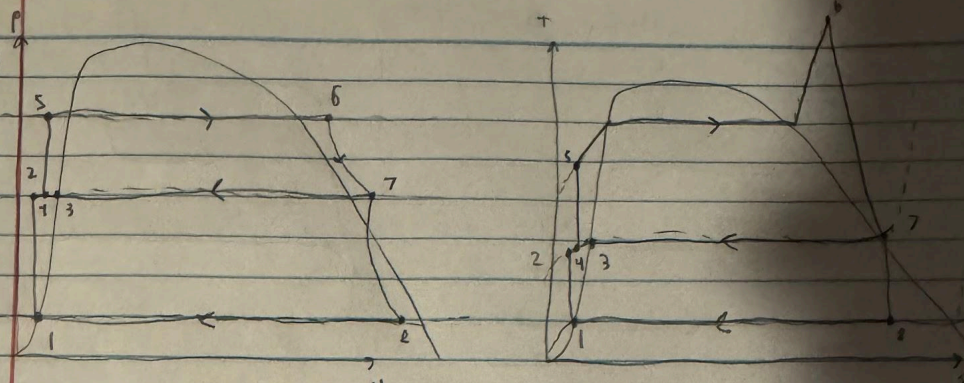


$$\dot{m}_{\text{wet}} = \dot{m}_a [(h_6 - h_7) + (1 - \eta)(h_2 - h_1)] - (1 - \eta)(h_2 - h_1) + (1 - \eta)(h_2 - h_1)$$

$$= [389.36 + 0.65(1.61) - 858] \text{ kJ/s}$$

$$\dot{m}_{\text{wet}} = 24.063 \text{ kg/s}$$

10-6d



$1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8$
 $p_1 = 10 \text{ kPa} \quad p_2 = 1200 \text{ kPa} \quad p_3 = 1200 \text{ kPa} = p_4 \quad p_5 = 2 \text{ kPa} \quad p_6 = 500 \text{ kPa} \quad p_7 = 1200 \text{ kPa} \quad p_8 = 10 \text{ kPa}$
 $h_1 = 191.81 \text{ kJ/kg} \quad h_2 = 193.01 \quad h_3 = 298.6 \quad h_4 = 344.41 \quad h_5 = 344.54 \quad h_6 = 3079.7 \quad h_7 = 2246 \text{ kJ/kg}$
 $v_1 = 0.00101 \text{ m}^3/\text{kg} \quad v_4 = 0.01 \quad v_5 = 34721 \quad v_6 = 3445.4 \quad v_7 = 2.8 \text{ kJ/kg}$
 $w_p = h_2 - h_1$
 $w_{\text{pump}} = 1.202 \text{ kJ/kg}$
 $m_3 h_3 + m_2 h_2 = m_4 h_4$
 $m_1 = 4m_7 = 55$
 $m_7 = 13.75$

$w_{\text{pump}} = v_1 (p_2 - p_1)$
 $w_{\text{pump}} = 1.202 \text{ kJ/kg}$

$v_{p2} = v_4 (p_5 - p_4)$
 $= 2.8 \text{ kJ/kg}$

$h_5 = h_4 + w_{p2}$

$w_{\text{turb}} = m_7 (h_6 - h_7) + m_8 (h_6 - h_5) \rightarrow 13.75 (3079.7 - 2246) + (55 - 13.75) (3079.7 - 3445.4)$
 $w_{\text{turb}} = 54503.63 \text{ kW}$

$w_{\text{net}} = 54503.63 - 203.58 = 54300 \text{ kW}$

$q_{\text{in}} = m_5 (h_6 - h_5) \rightarrow 55 (3079.7 - 3445.4) \rightarrow 170400.51$

$q_p = m_7 (h_7 - h_3) = 31365.1$

$\epsilon_0 = \frac{w_{\text{net}} + q_p}{q_{\text{in}}} = 0.502$