

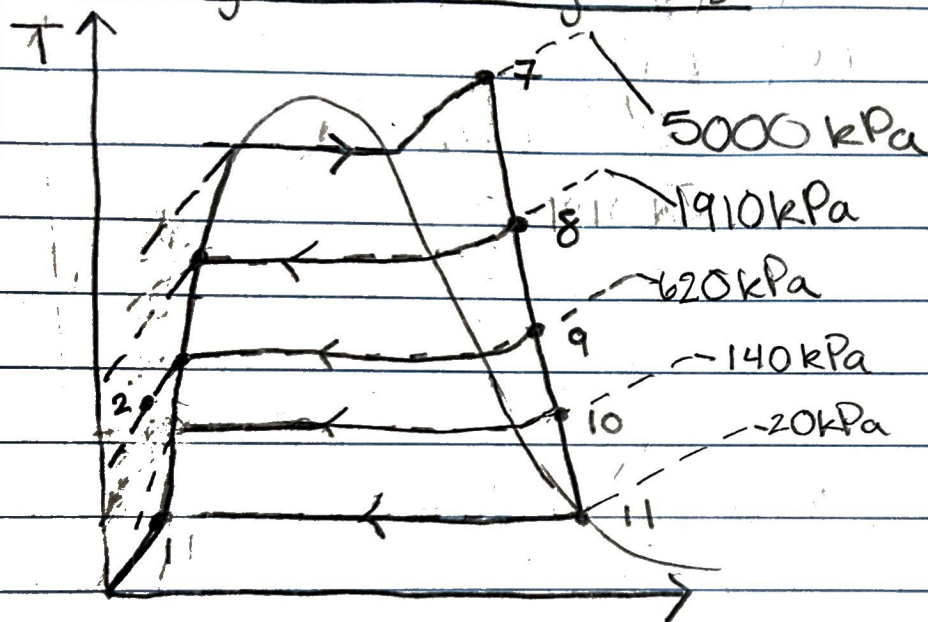
Materials: Water

Analysis: To improve upon the efficiency the turbine must be improved upon

Purpose: To determine the fraction of extracted mass "y" for the open feedwater heater, determine the cooling water temperature in the condenser.

Determine the rate of heat rejected in the condenser, net power, and the thermal efficiency.

Drawings and Diagrams



Sources:

08 Rankine Cycle

Homework 2.2

Design Considerations

- Ideal rankine cycle
- State 3 saturated liquid

Data and Variables

$$T_7 = 700^\circ\text{C} \quad P_7 = 5000 \text{ kPa} \quad C_p = 4.18 \frac{\text{kJ}}{\text{kg} \cdot \text{K}} \quad \dot{m}_c = 4200 \frac{\text{kg}}{\text{s}}$$
$$\dot{m} = 100 \frac{\text{kg}}{\text{s}}$$