

Turn this sheet in with your answer

| Stream | P (Mpa) | T (°C) | State             | q   | H (kJ/kg) | HL (kJ/kg) | HV (kJ/kg) | V (m <sup>3</sup> /kg) | VL (m <sup>3</sup> /kg) | VV (m <sup>3</sup> /kg) |
|--------|---------|--------|-------------------|-----|-----------|------------|------------|------------------------|-------------------------|-------------------------|
| 1      | 3.5     | 350    | superheated steam |     | 3100      |            |            | 0.077                  |                         |                         |
| 2      | 1       | 180    | V/L               | 0.9 | 2580      | 763        | 2780       | 0.175                  | 0.00113                 | 0.194                   |
| 3      | 1       | 180    | Sat. Liq.         | 0   | 763       | 763        |            | 0.00113                | 0.00113                 |                         |
| 4      |         |        |                   |     |           |            |            |                        |                         |                         |

a) Shaft Work =  $-173 \text{ kW}$

b) Combined Heat =  $779 \text{ kW}$

c) Efficiency =  $0.222$  (Give comments/calculations on separate sheet)

d) Ideal Efficiency =  $0.273$  (Give comments/calculations on separate sheet)

e)

