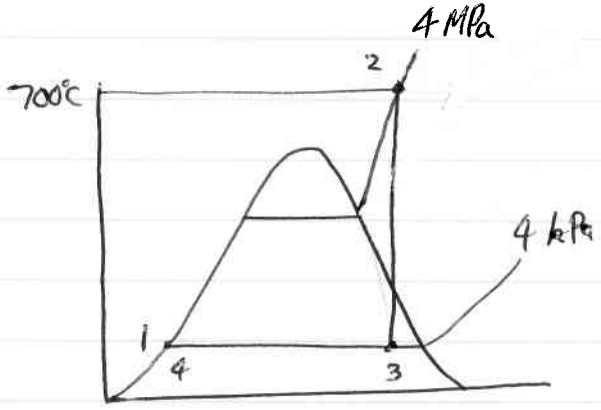
Qu 1 (cont.)



(c)

@ 4 MPa & 700°C

From superheat tables :

$h_2 = 3904 \text{ kJ/kg}$ & $S_2 = 7.619 \text{ kJ/kg K}$

$$\therefore \quad x = \frac{7.619 - 0.422}{8.475 - 0.422} = \underline{0.894}$$

$$h_3 = 121.4 + 0.894 \times 2433.1 = 2295.9 \text{ kJ/kg}$$

$$\eta_{th} = \frac{3904 - 2295.9}{3904 - 121.4} = \underline{0.425} \quad (42.5\%)$$

$$w = 3904 - 2295.9 = \underline{1608.1} \text{ kJ/kg}$$