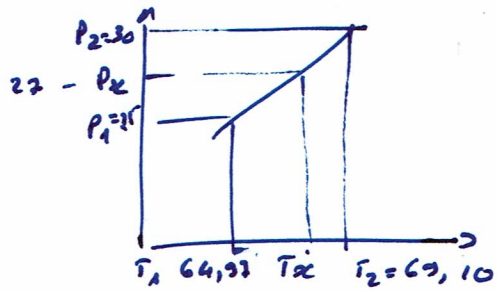
Exo 1 : Temperature de saturation :

a) 0,1 MPa → T = 99,63 °C

5,0 KPa → T = 32,88 °C

27 KPa → Tx = 66,622 °C



$$Tx = \frac{27-25}{\left(\frac{30-25}{69,1-64,97}\right)} + 64,97 = 66,62°C$$

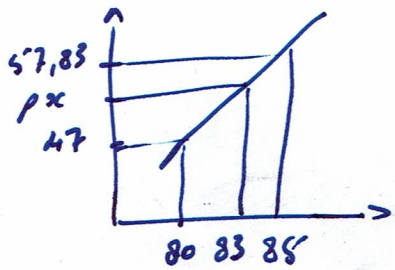
La pression de saturation aux températures :

T = 25 °C → P = 3,169 KPa

T = 310 °C → P = 9,856 MPa

T = 83 °C → P = ? $P_x = 53,554$ KPa

Table A1-1



$$\frac{85-80}{57,83-47,39} = \frac{83-80}{P_x-47,39}$$

Volume spécifique de la vapeur surchauffée dans les conditions :

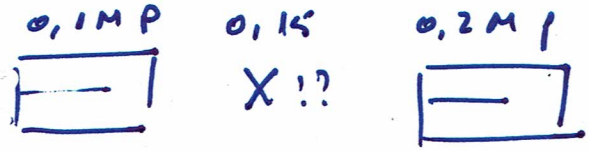
a) 0,1 MPa, 150 °C → $v = 1,9364\ m^3/kg$ Table A1.3

b) 0,1 MPa, 175 °C

$$\frac{200-150}{2,172-1,9364} = \frac{175-150}{v-1,9364} \rightarrow v = 2,0542\ m^3/kg$$

c) 0,15 MPa, 200 °C

0,1 MPa / 0,2 MPa



$$\frac{0,2-0,1}{1,08033-2,172} = \frac{P_x-0,1}{v_x-2,172} \rightarrow v_x = 1,62615\ m^3/kg$$