1)

$\frac{1}{T}$ [K^{-1}]	$\ln \frac{p}{mmHg}$	$\ln \frac{p}{kPa}$	$\ln \frac{p}{bar}$
0'003257	6'579	4'56	−0'0412
0'003333	6'2146	4'199	−0'4058
0'003496	5'736	3'721	−0'8838
0'003545	5'5798	3'564	−1'0407

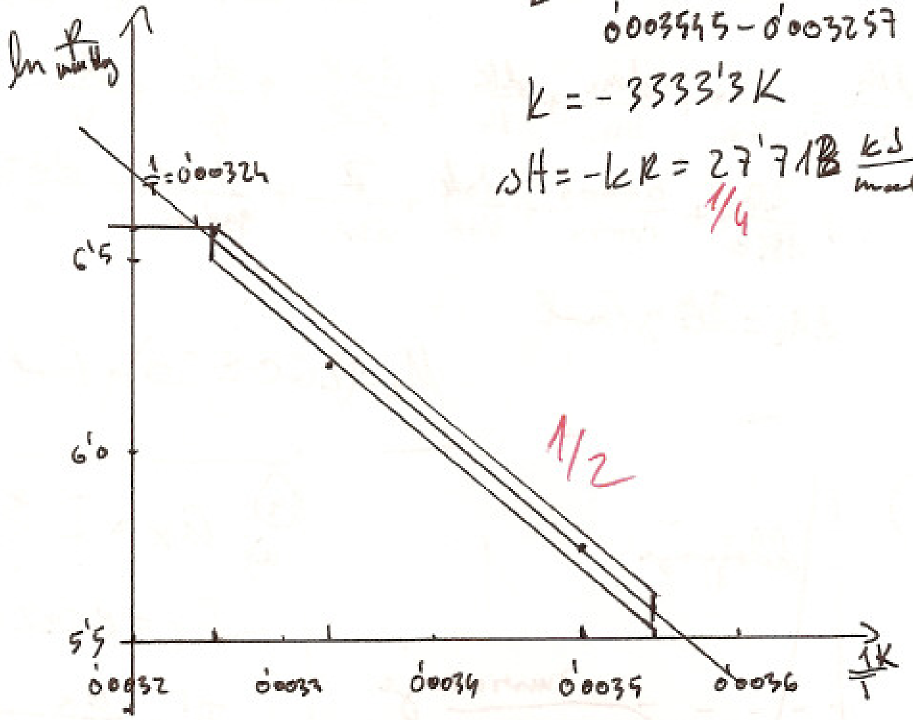
$\ln \frac{p_0}{kPa} = 4'569$

$\ln \frac{p_0}{mmHg} = 6'585$

$\frac{1}{T} = 0'00324\ K^{-1}$

$T = 308'6\ K$

$T_v = 35'6\ °C$ 1/2



$k = \frac{5'58 - 6'54}{0'003545 - 0'003257}$

$k = -3333'3\ K$

$\Delta H = -kR = 27'718\ \frac{kJ}{mol}$ 1/4

b) $Q = P \cdot t$

$m = \frac{QM}{\Delta H} = \frac{200 \cdot [illegible]\ W \cdot 1800\ s \cdot 7kg}{28000\ J/mol}$

$m = 951\ mg$ 1/2

$k_2 = \frac{5'61 - 6'51}{0'003545 - 0'003257}$

$k_2 = -3125\ K$

$\Delta H_2 = 25'98\ \frac{kJ}{mol}$

$k_1 = \frac{5'53 - 6'59}{0'003545 - 0'003257}$

$k_1 = -3681\ K$

$\Delta H_1 = 30'60\ \frac{kJ}{mol}$

2'89

$\Delta(\Delta H) \simeq 3\ \frac{kJ}{mol}$ 1/4

$\frac{\Delta(\Delta H)}{\Delta H} = 0'104 \simeq 0'1$

$\Delta H = (28 \pm 3)\ \frac{kJ}{mol} = 28(1 \pm 0'1)\ \frac{kJ}{mol}$

1/4 1/4

③ $m_s = m_{p+s} - m_p = 1{,}1044\,g$ $\Delta m_s = \Delta m_{ps} + \Delta m_p = 0{,}0004\,g$

$\Delta R = 131\,\Omega$ $\Delta(\Delta R) = 7\,\Omega$

$\Delta T = 0{,}40348\,K$

$m_1 = \rho \cdot V = 19{,}96412\,g$ $M_2 = \frac{K_K \cdot m_2}{m_1\,\Delta T} = \frac{K_K \cdot m_2}{\rho \cdot V \cdot k \cdot \Delta R}$

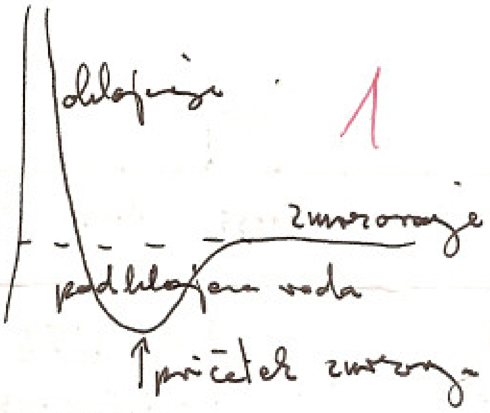
$M_2 = \frac{1860\,gK \cdot 1{,}1044\,g}{mol \cdot 19{,}96412\,g \cdot 0{,}40348\,K} = 255{,}016\,g/mol$ 1/2

$\frac{dM_2}{M_2} = \frac{dK_K}{K_K} + \frac{dm_2}{m_2} + \frac{dk}{k} + \frac{d\Delta R}{\Delta R} + \frac{d\rho}{\rho} + \frac{dV}{V} =$

$= \frac{20}{1860} + \frac{0{,}0004}{1{,}1044} + \frac{0{,}01}{3{,}08} + \frac{7}{131} + \frac{0{,}005}{998{,}206} + \frac{0{,}02}{20} = 0{,}07 \approx 0{,}08$ 1/4

$dM_2 = 20\,g/mol$ 1/4

$M_2 = (260 \pm 20)\,g/mol = 260(1 \pm 0{,}08)\,g/mol$ 1/4 1/4

b) 

1

④ a) $E_x = I \cdot \frac{\rho \cdot l}{S} = 0{,}08\,A \cdot \frac{0{,}098\,\Omega\,mm^2 \cdot 0{,}35\,m}{m \cdot \pi\,(0{,}18\,mm)^2}$

$E_x = 0{,}2927\,V$ 1/2

$I' = \frac{E_x}{R_Z + R_N} = 0{,}00813\,A$ 1/2

$E_x' = E_x - I'R_N = 0{,}2033\,V$

$E_x - E_x' = I'R_N = 0{,}0894\,V$ 1/2

b) 1) Ker ne poznamo E_{steklene} 1/2

2) ne vemo ali je izmerjena vrednost, ker ne poznamo $E_{\text{DIFUZIJSKI}}$ 1/2

② b) 1) U manometer 1/4

2) Bourdonova cev 1/4

3) uparovalni lističi 1/4

4) McLeodov manometer 1/4

a) $R = R_0(1 + at + bt^2)$

$bt^2 + at + 1 - \frac{R}{R_0} = 0$

$t = \frac{-a \pm \sqrt{a^2 - 4b(1 - \frac{R}{R_0})}}{2b}$

$t_1 = 37{,}0522\,°C$

$t_2 = 39{,}1227\,°C$ 1/2

$\Delta T = t_2 - t_1 = 2{,}0705\,°C$ 1/2

$dR = R_0(a\,dt + 2tb\,dt)$

$dt_1 = \frac{dR}{R_0(a + 2bt)} = 0{,}2587\,°C$

$dt_2 = 0{,}2589\,°C$

$d\Delta T = dt_1 + dt_2 = 0{,}5176\,°C$ 1/2