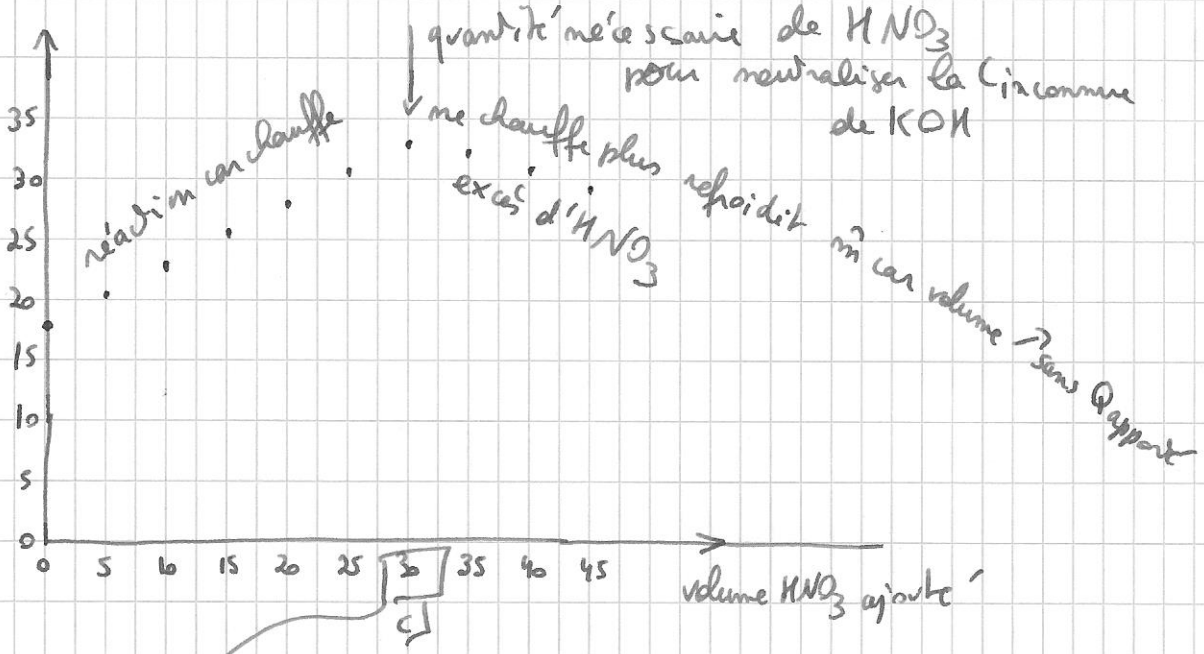
6 a) $HNO_3 + KOH \longrightarrow KNO_3 + H_2O$

b)



d) $HNO_3 + KOH \longrightarrow KNO_3 + H_2O$

$V_S = 30\,mL$

$C = 2\,M$

$\times V_S = 0{,}03\,L$

$n = 0{,}06\,mol$

	HNO_3	KOH		
n_0	0,06 mol			
Δn	$-1.0{,}06$	$-1.0{,}06$		
n_f	0	0		

$n_0 = 0{,}06\,mol$

$/V_S = 25\,mL = 0{,}025\,L$

$C = 2{,}4\,M$

$\times M_{KOH} = 56\,g/mol$

e) $m = 3{,}36\,g$

f) $Q = c \cdot m \cdot \Delta t^\circ = 4{,}18 \cdot 0{,}055 \cdot 14{,}9 = 3{,}43\,kJ$

$\Delta t^\circ = t^\circ_f - t^\circ_i = 32{,}9\,^\circ C - 18\,^\circ C = 14{,}9\,^\circ C$

$m_{qui\ chauffe} = 25\,mL$ (de départ) $+ 30\,mL$ (ajout nécessaire) $= 55\,mL = 0{,}055\,L$

$\times \rho = 1\,kg/L$

$m_{qui\ chauffe} = 0{,}055\,kg$

g) $\Delta H_{molaire} = \frac{\Delta H}{n}$

$= -\frac{3{,}43}{0{,}06} = -57{,}2\ kJ/mol$

$\Delta H = -Q$

$= -3{,}43\,kJ$