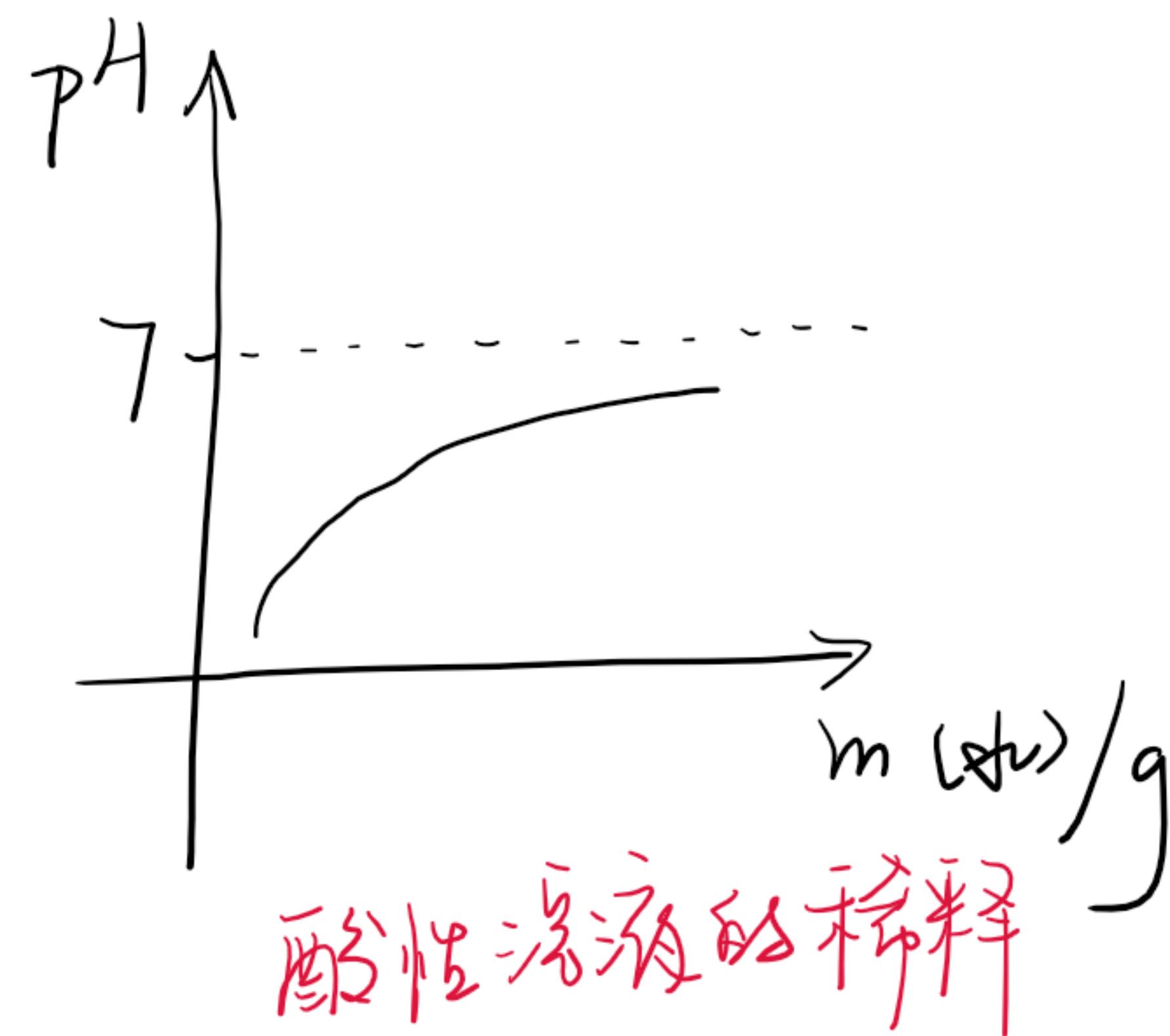
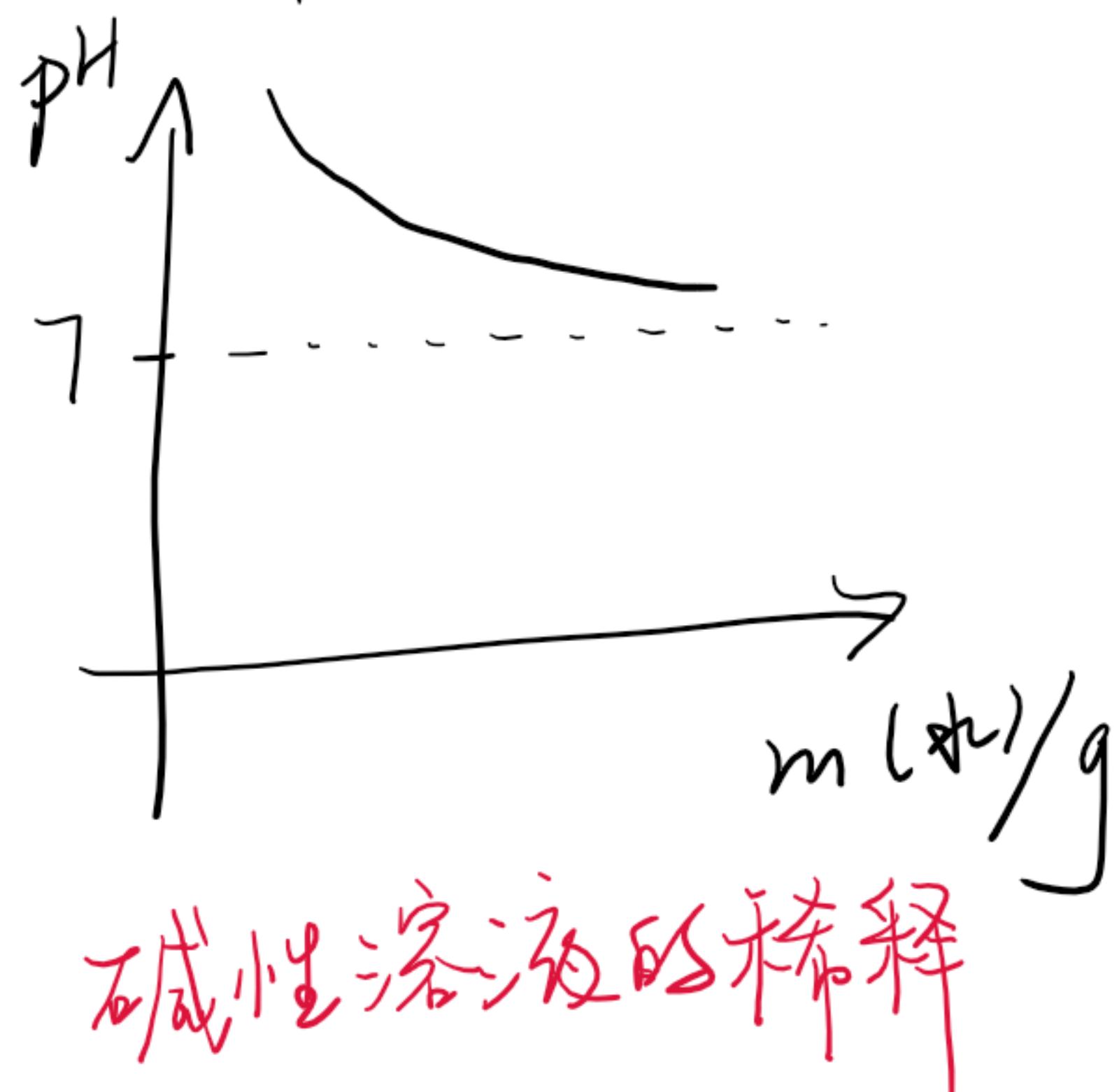


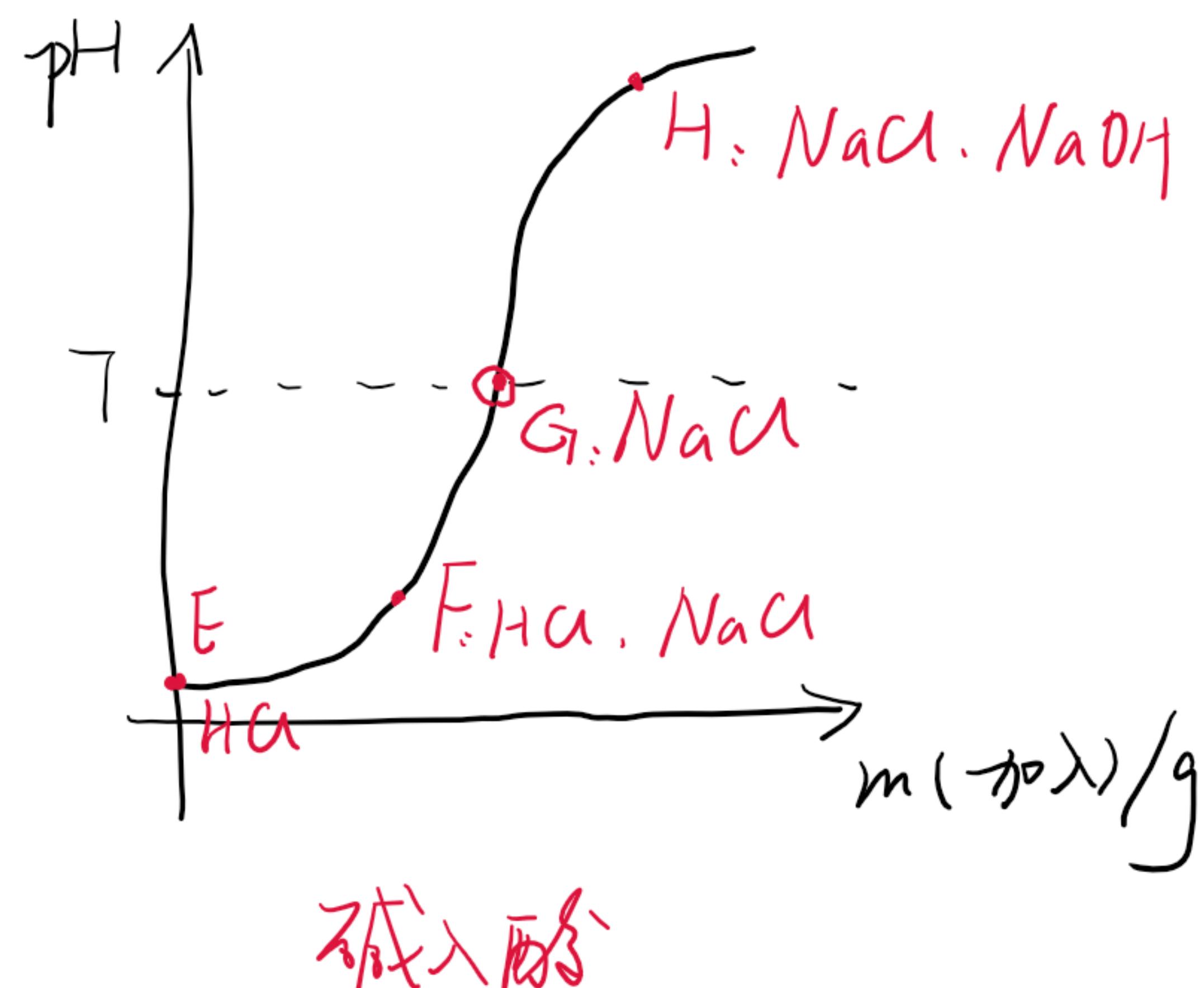
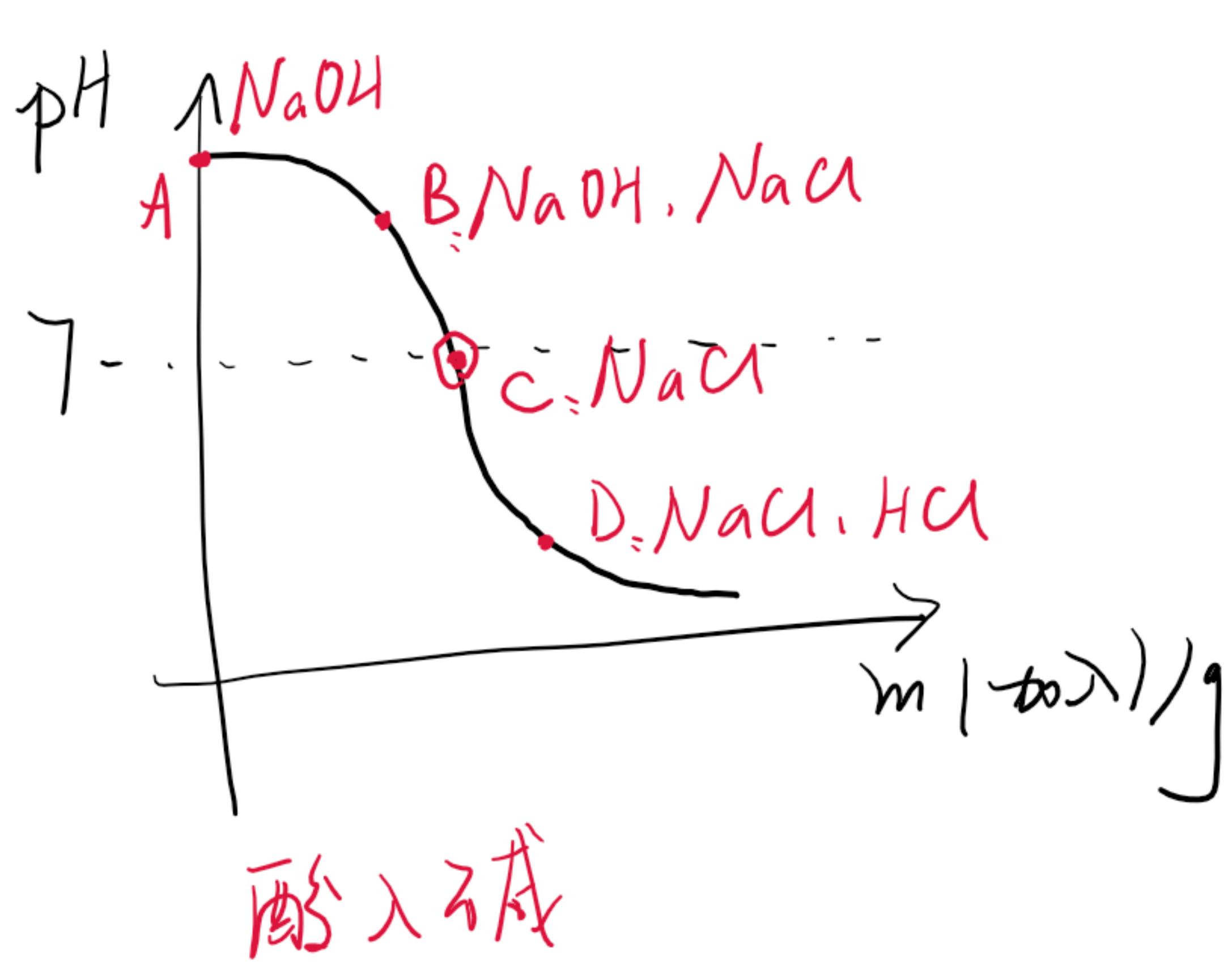
公益课九化第12讲 图像问题

一. pH 图像

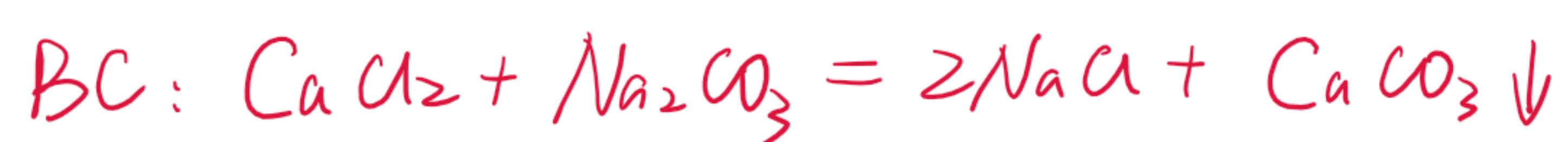
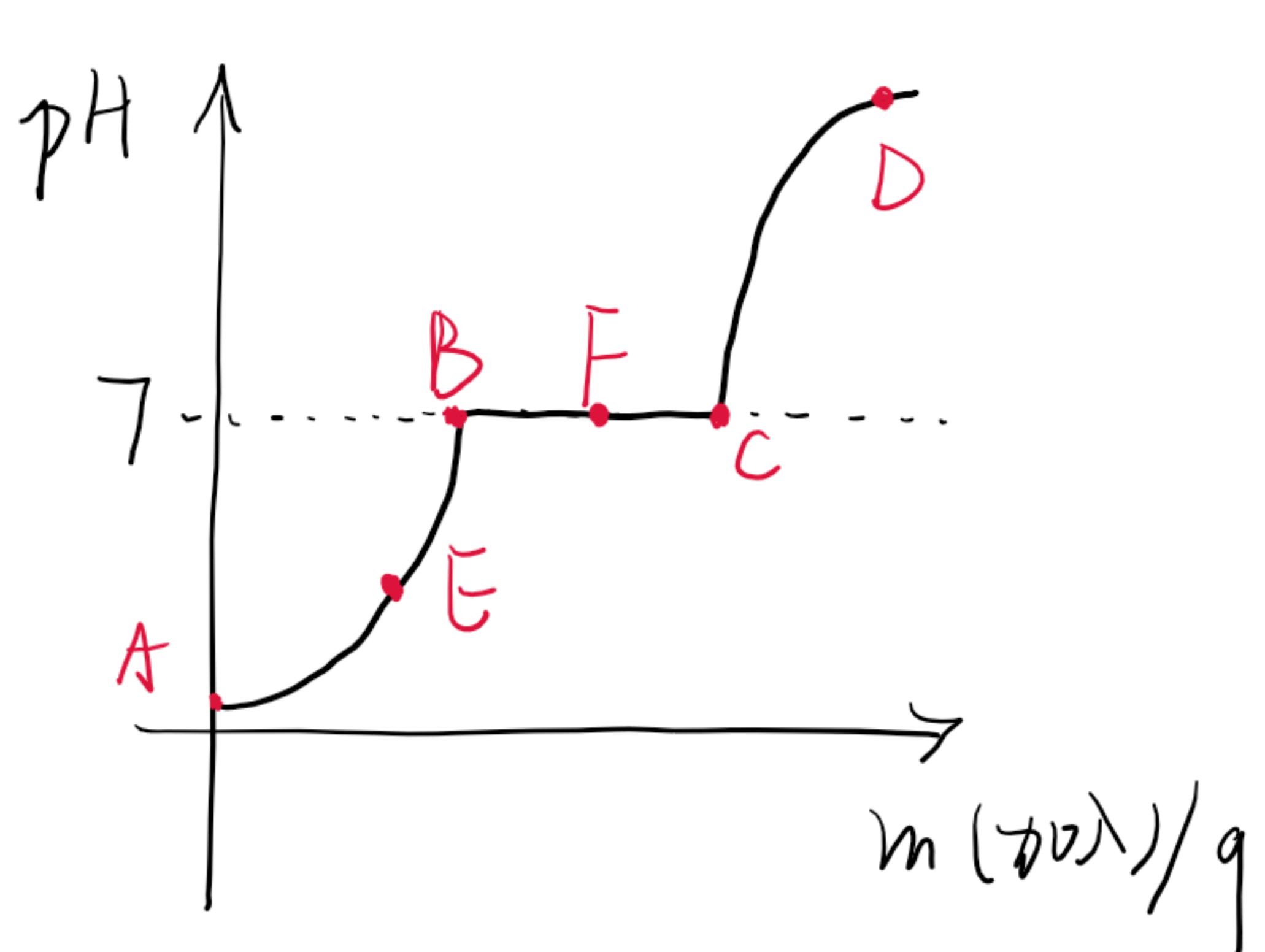
① 稀释问题



② 中和反应 pH 变化 ($\text{NaOH} + \text{HCl} = \text{NaCl} + \text{H}_2\text{O}$)



③ 向 $\text{HCl}, \text{CaCl}_2$ 混合溶液中加入 Na_2CO_3 溶液



A: ① $\text{HCl}, \text{CaCl}_2$; B: ④ $\text{NaCl}, \text{CaCl}_2$; C: ⑤ NaCl ; D: ⑦ $\text{NaCl}, \text{Na}_2\text{CO}_3$
 E: ② $\text{HCl}, \text{CaCl}_2, \text{NaCl}$; F: ⑥ $\text{NaCl}, \text{CaCl}_2$

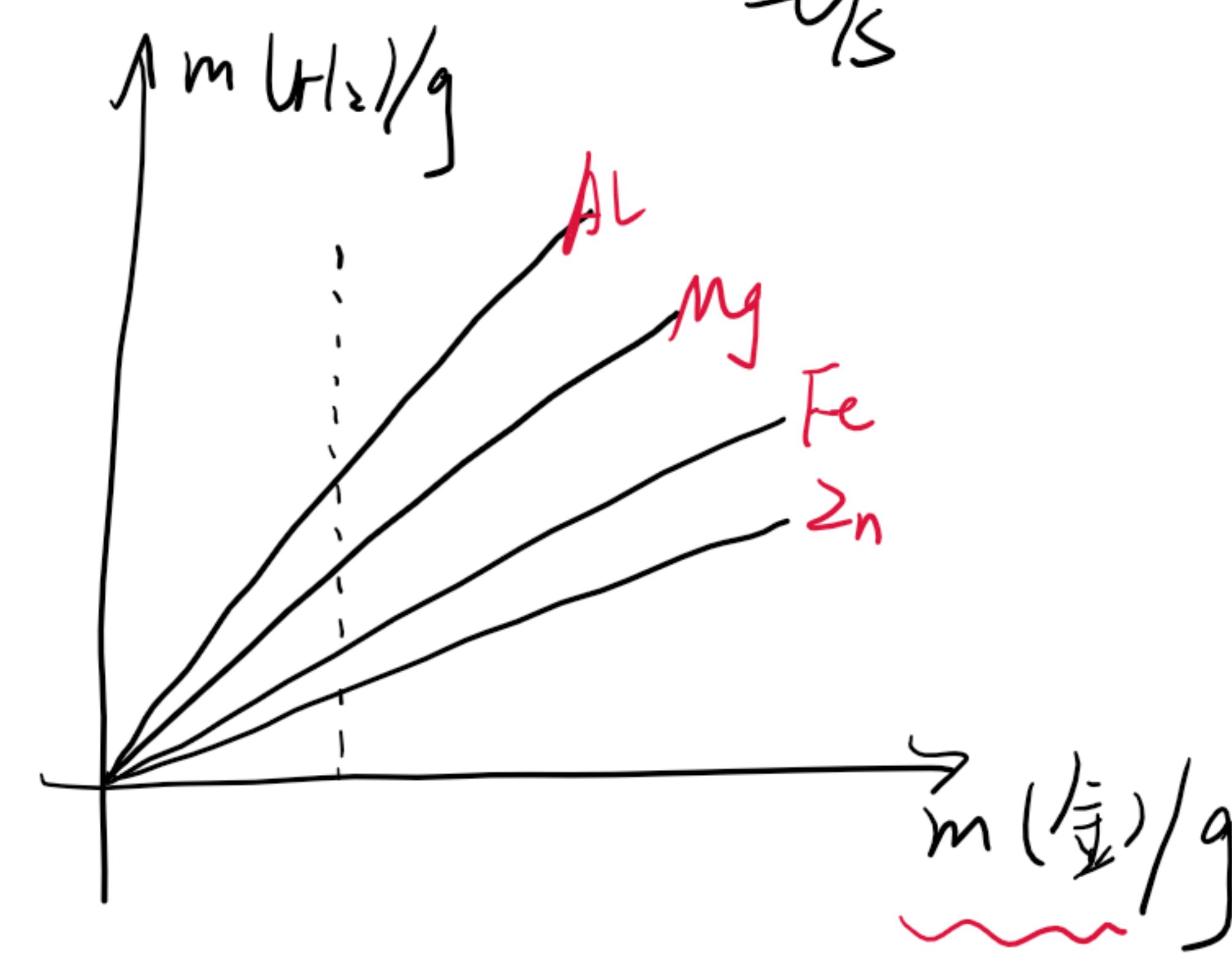
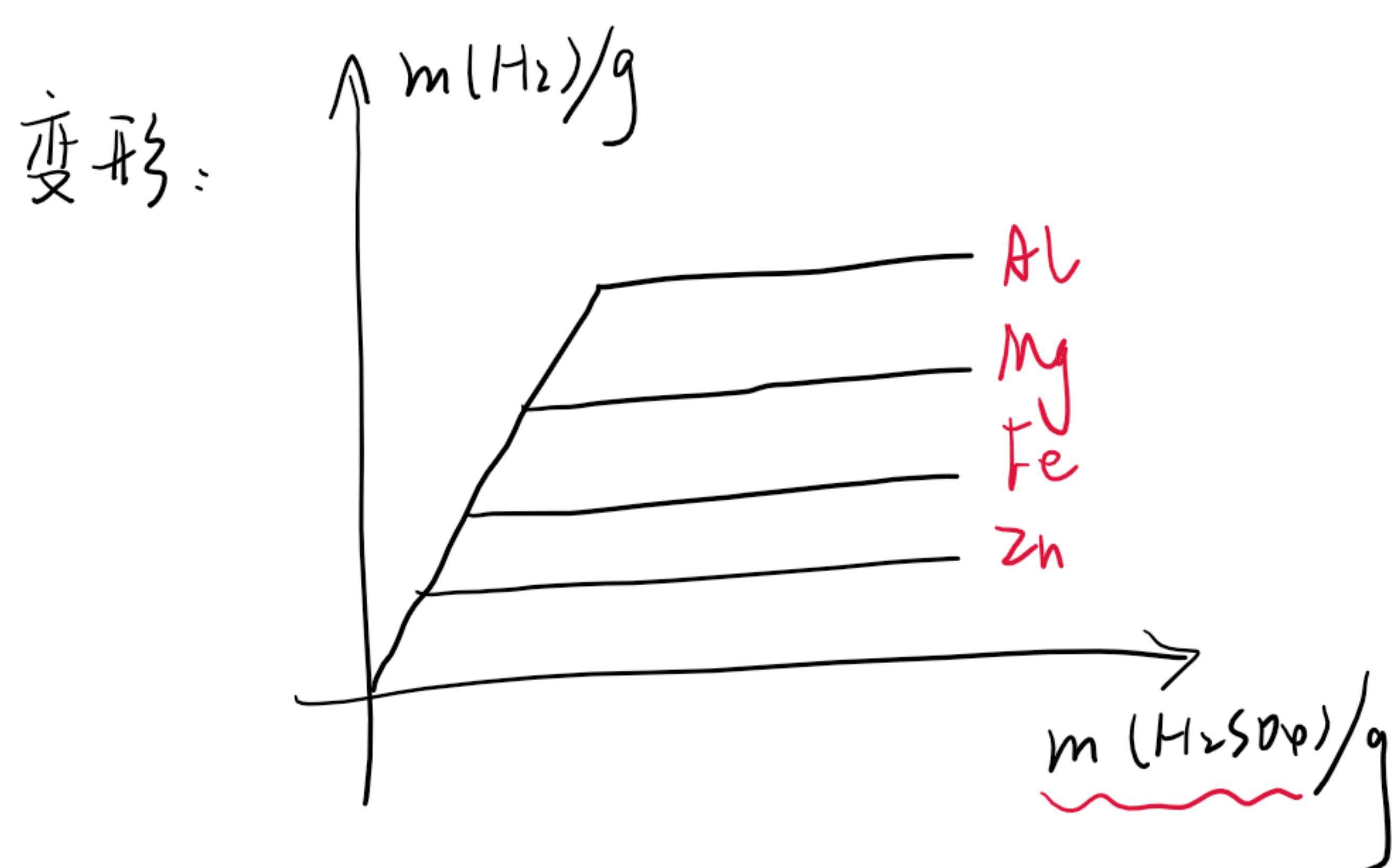
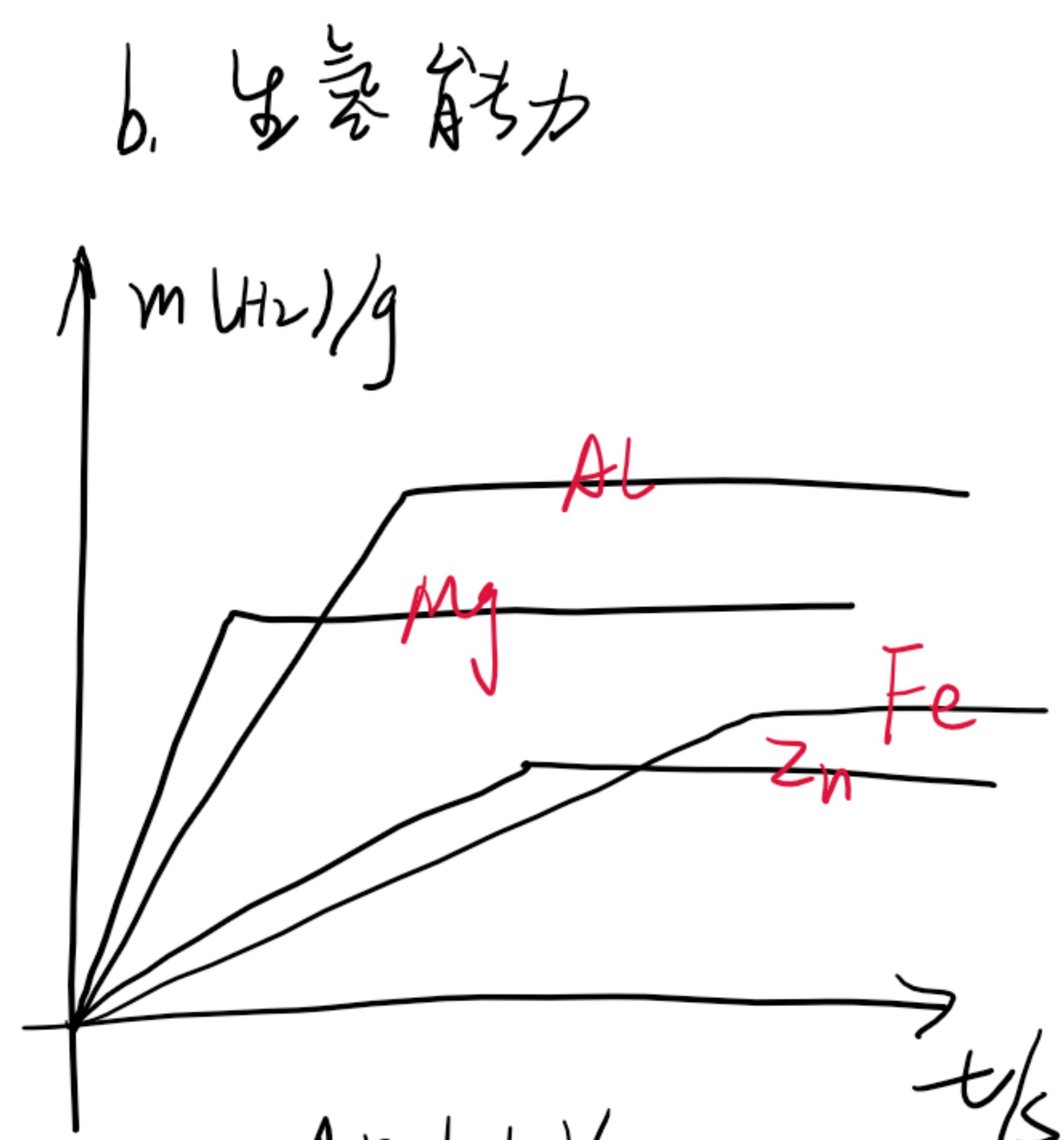
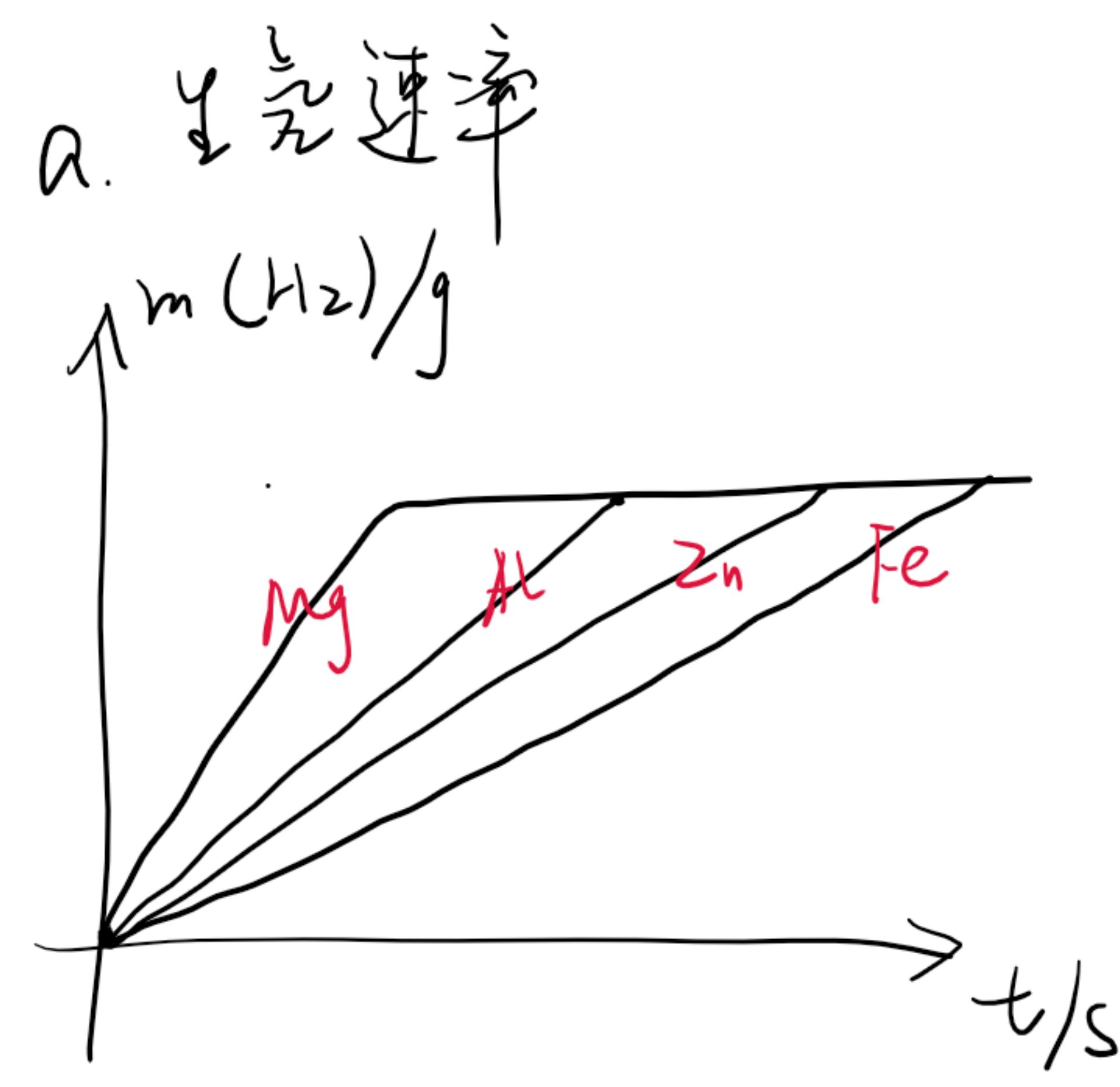
$$m(\text{HCl}): ① > ②$$

$$m(\text{CaCl}_2): ▲ > ●$$

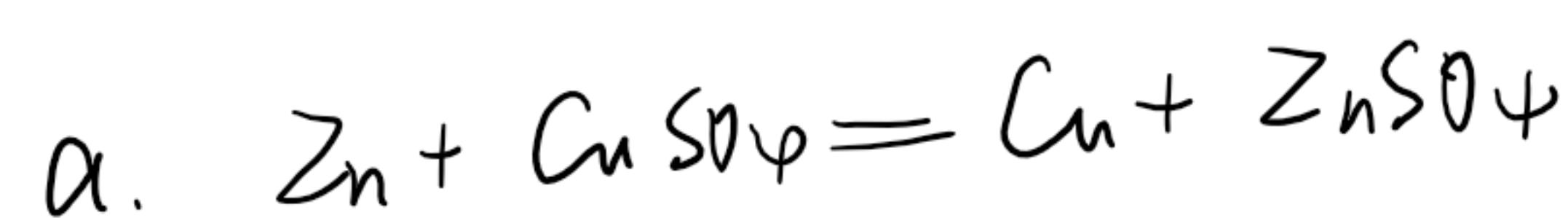
$$m(\text{NaCl}): ③ < ④ < ⑤ < ⑥ = ⑦$$

二. 金属与酸、与盐反应图像

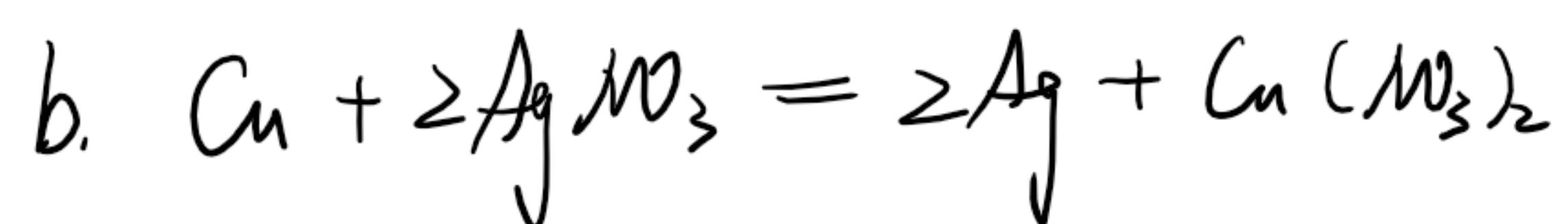
① 与酸反应



② 与盐溶液反应 (注意 $\Delta m_{\text{溶液}}$ 、 $\Delta m_{\text{固体}}$)

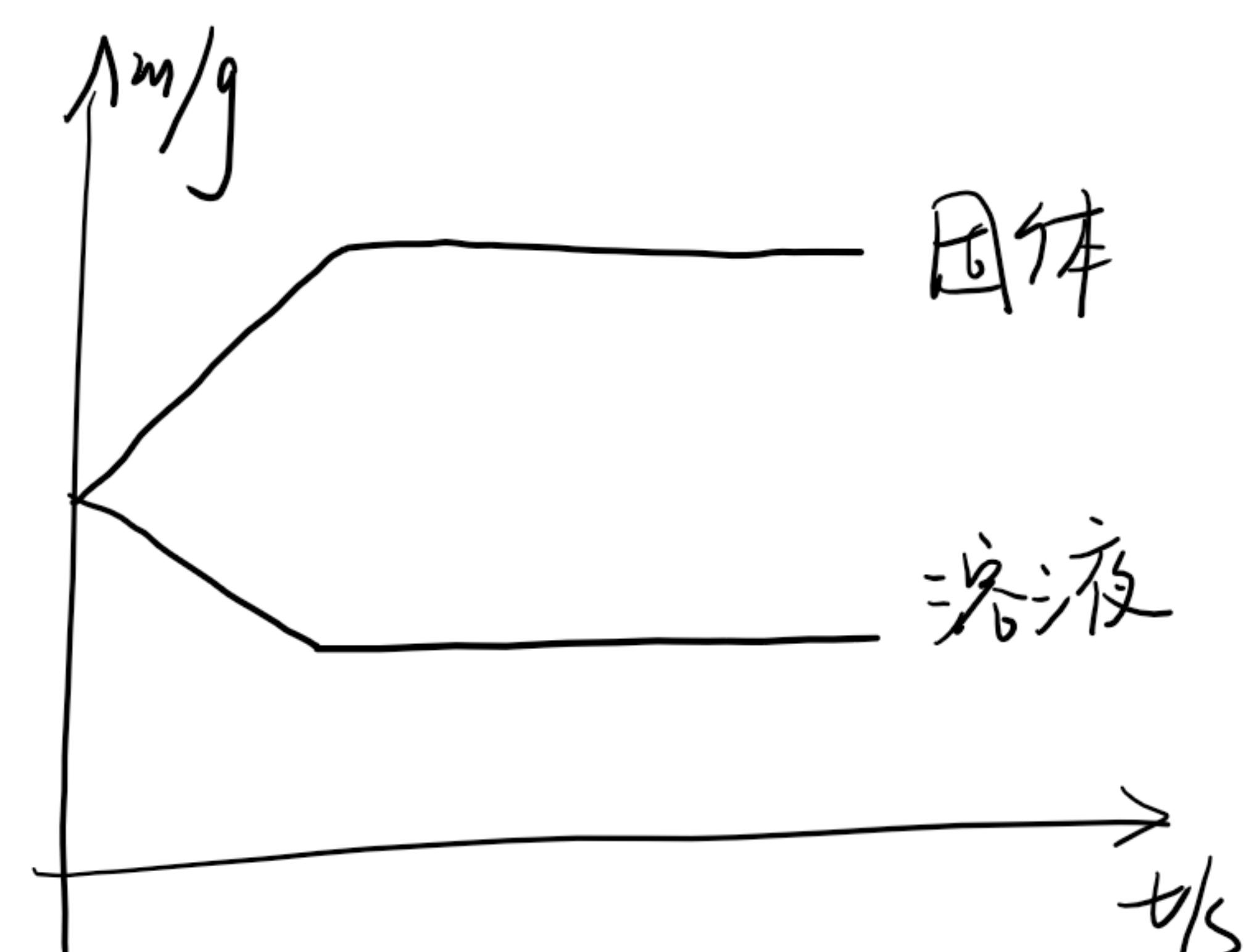
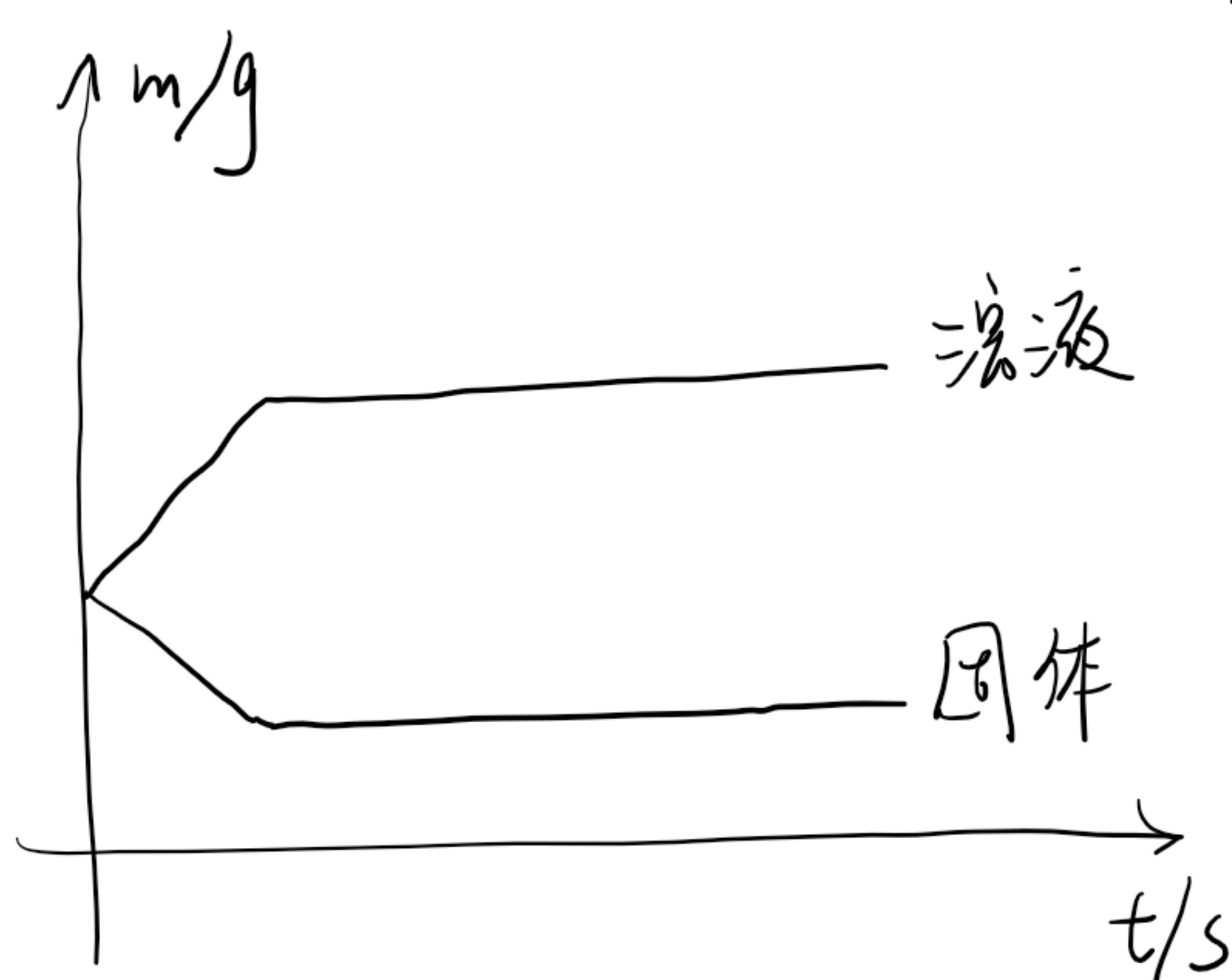


$$CuSO_4 \sim ZnSO_4 \\ 160 \quad 161$$



$$2AgNO_3 \sim Cu(NO_3)_2 \\ 340 \quad 188$$

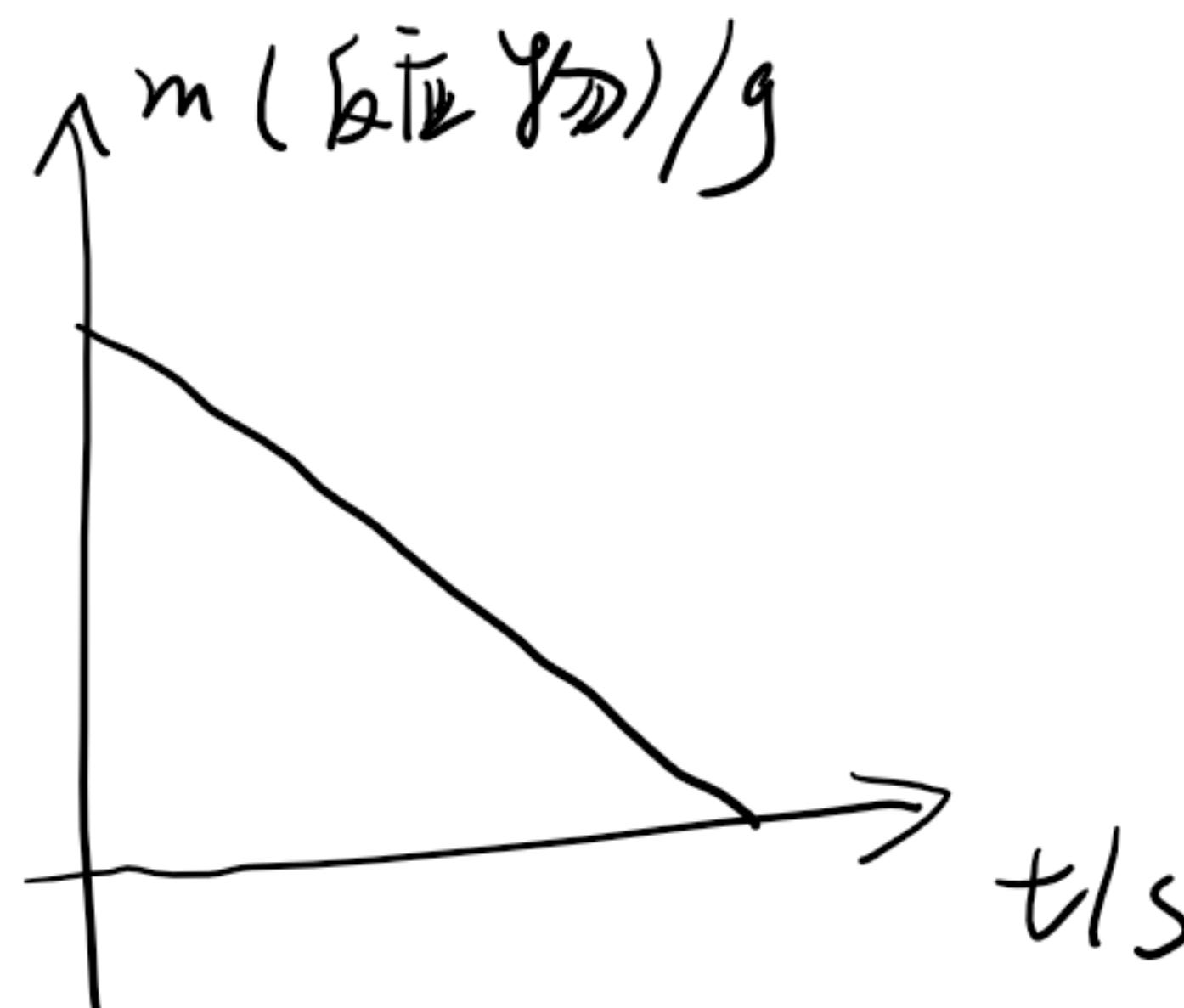
$$Cu \sim 2Ag \\ 64 \quad 216$$



* 注意起始点是否为0，利用整体守恒。

三、反应中反应物与生成物关系

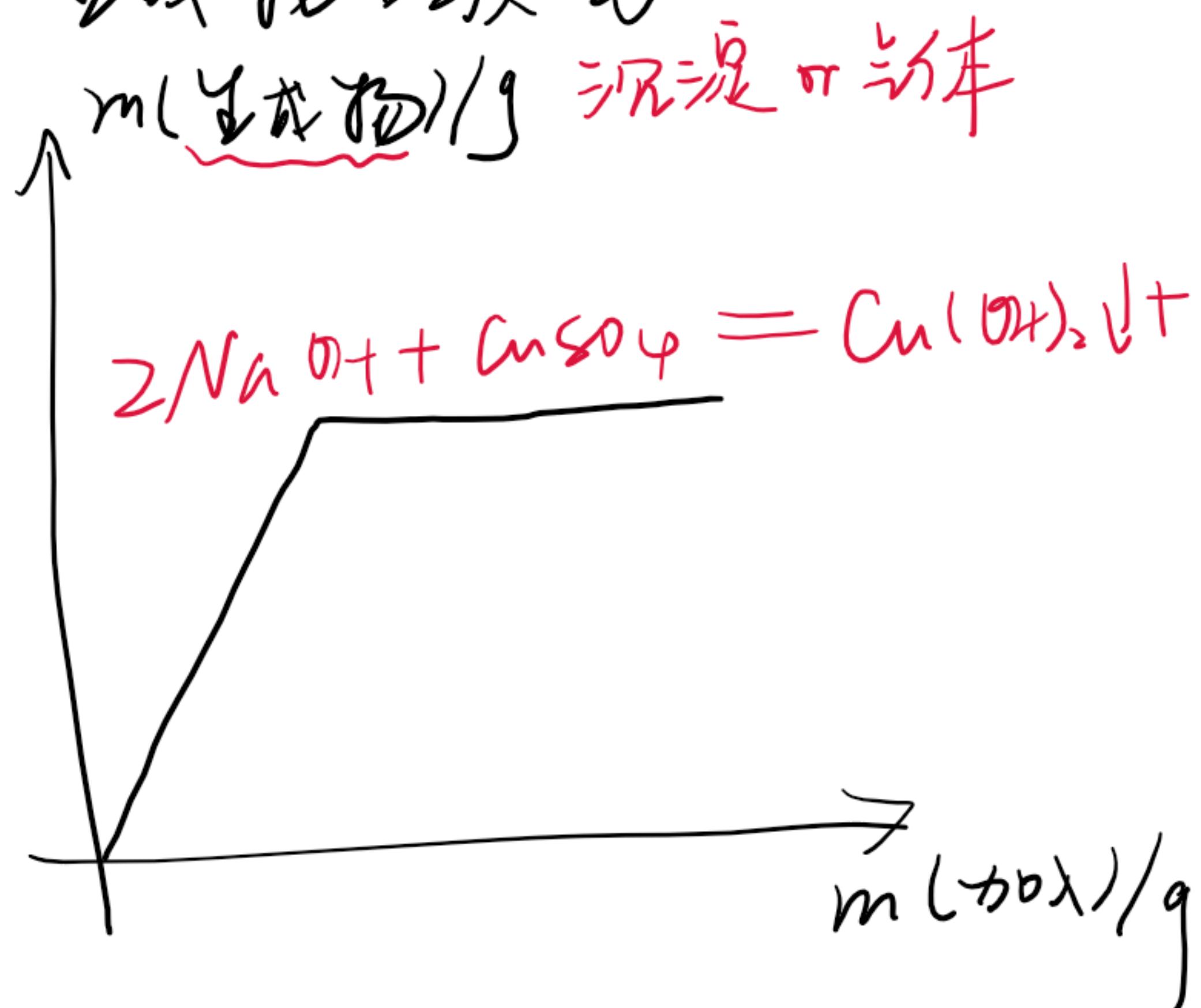
① 反应物的质量变化图像



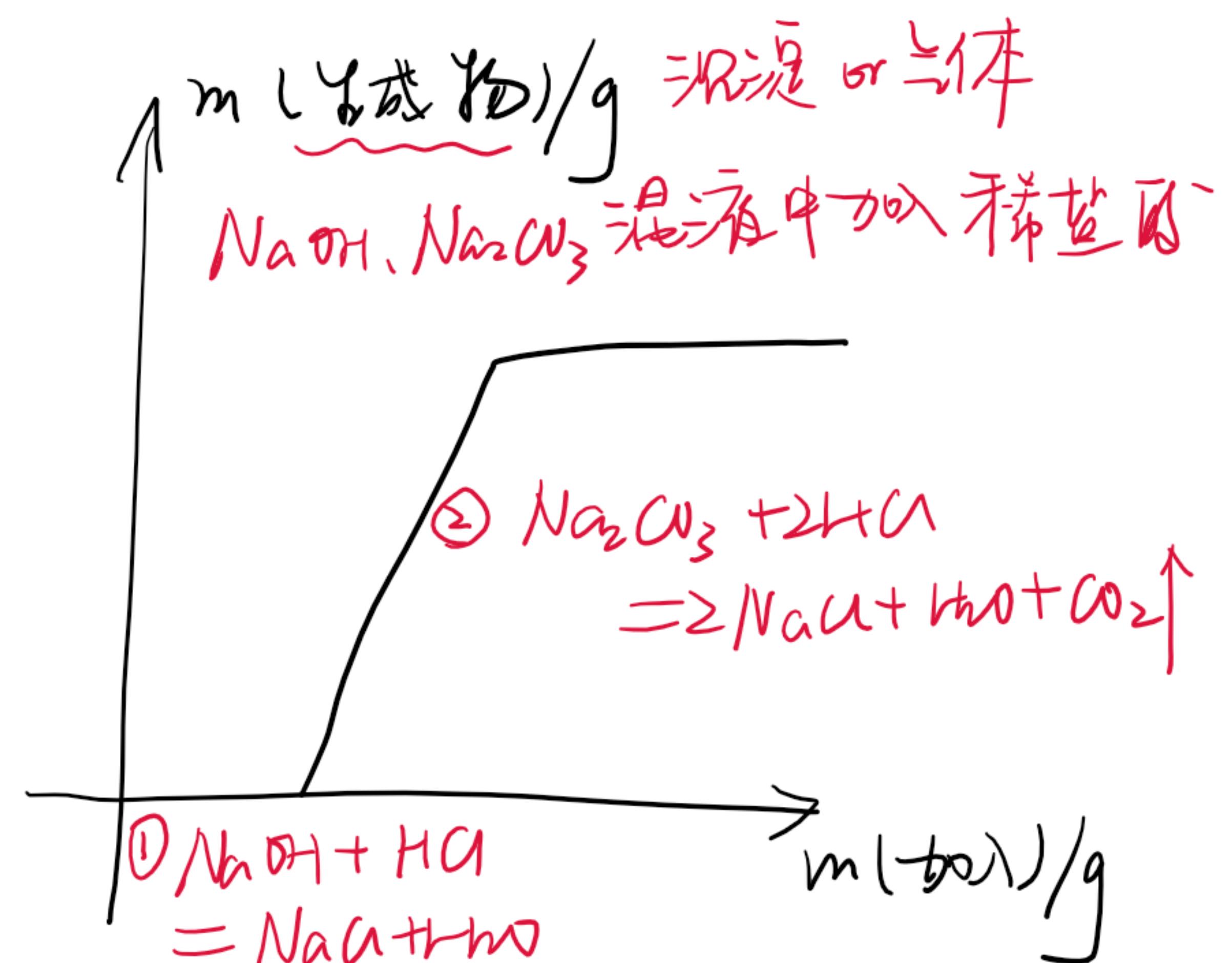
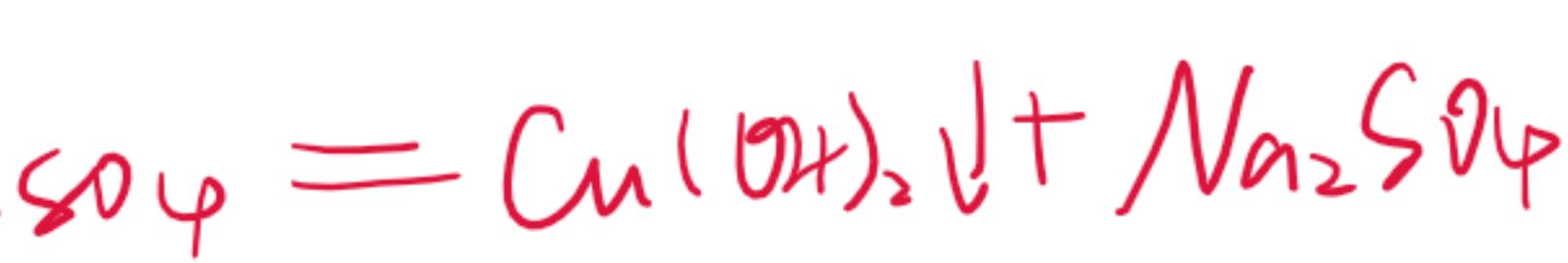
关注终点

从而判断反应物是否反应完毕，剩余量确切值。

② 生成物的质量变化图像

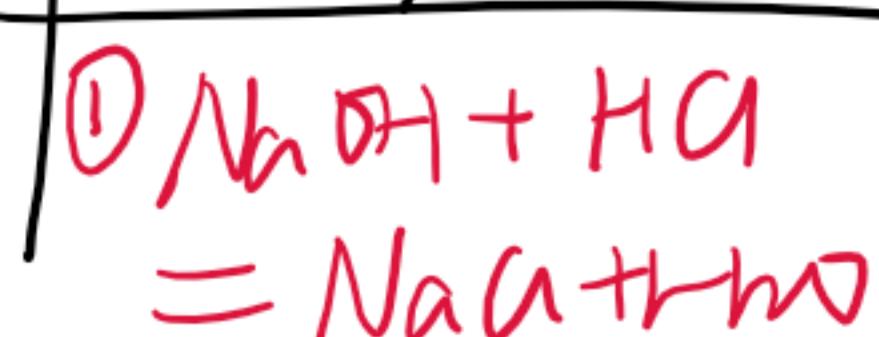


沉淀或气体

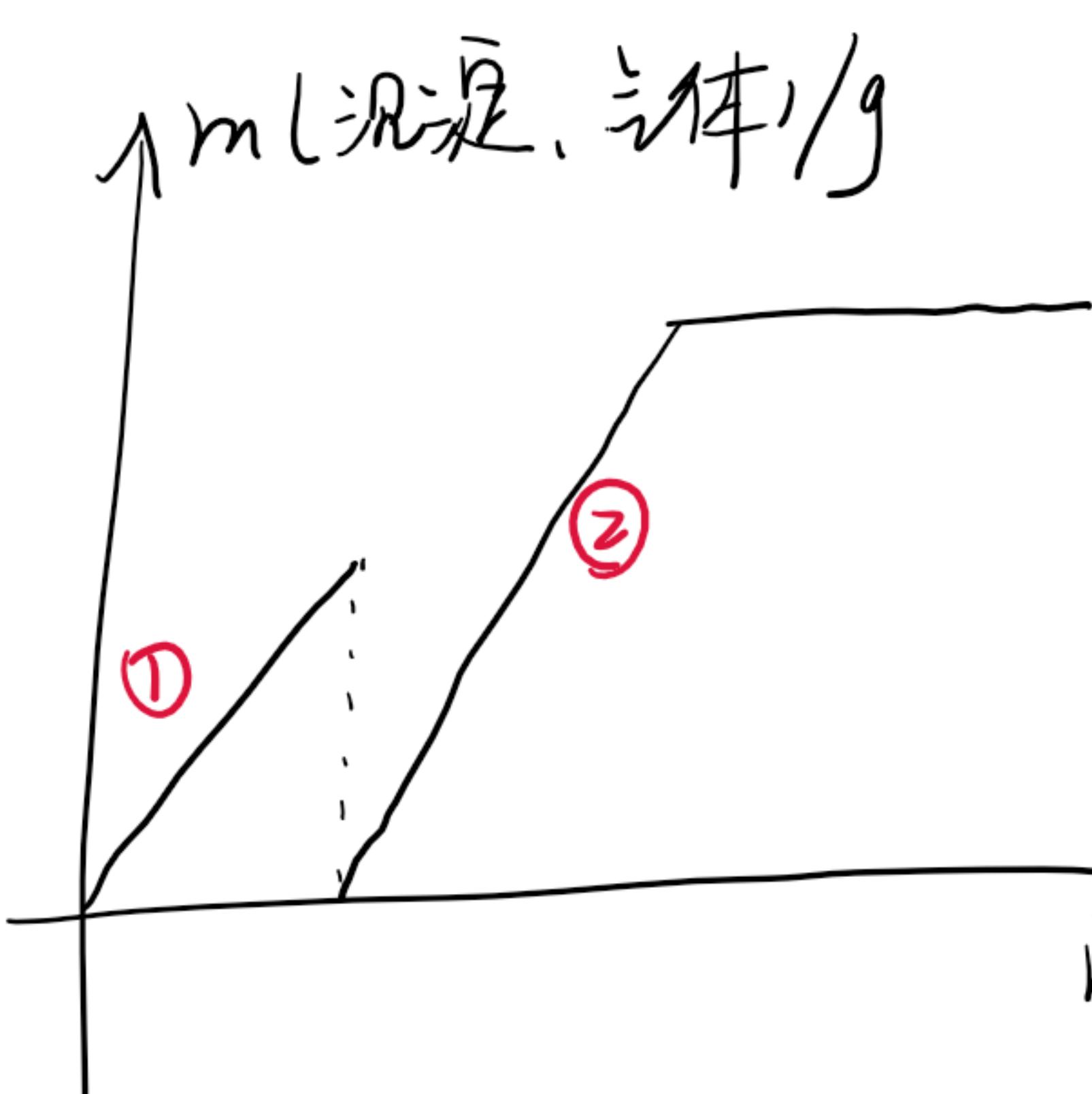


沉淀或气体

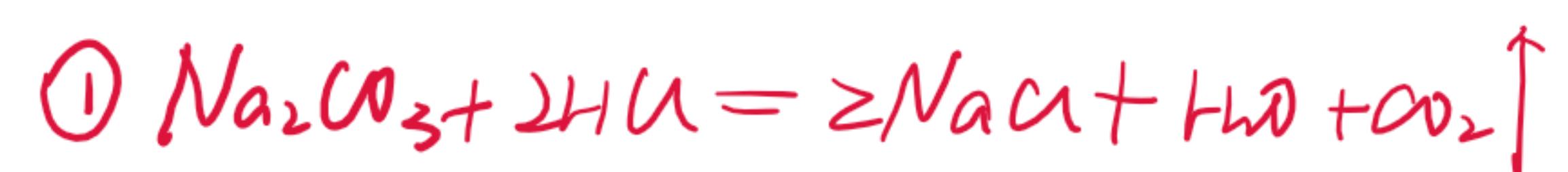
$\text{NaOH}, \text{Na}_2\text{CO}_3$ 混液中加入稀盐酸



变形



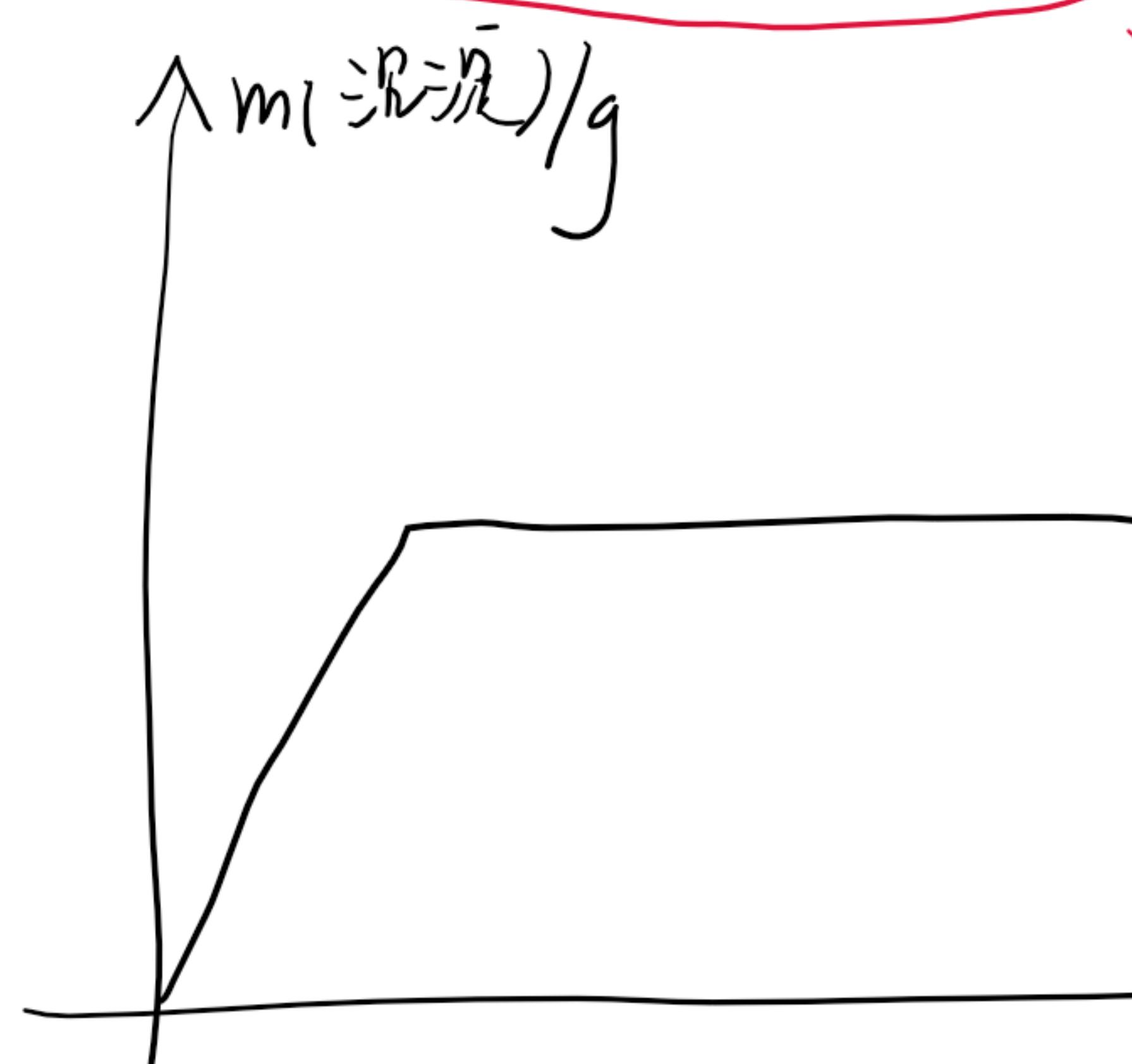
形成竞争
有先后顺序



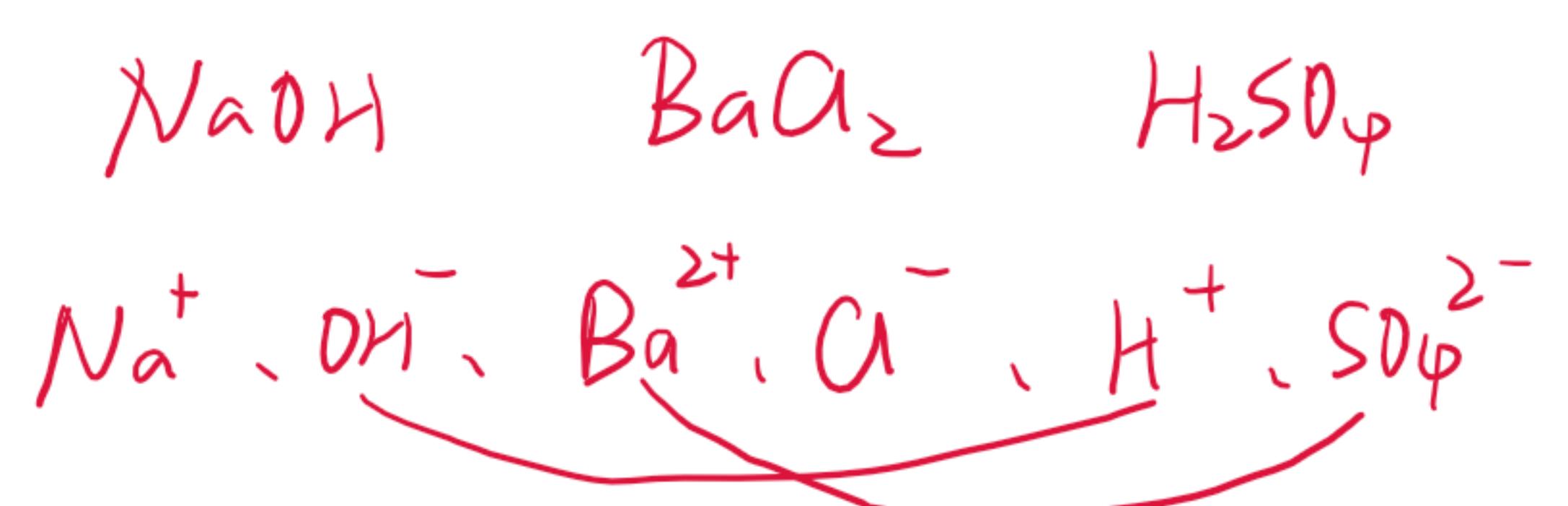
$\text{HCl}, \text{CaCl}_2$ 混液中加入 Na_2CO_3 混液

先后进行

未形成竞争
同时反应



向 NaOH 和 BaCl_2 混液中加入稀硫酸



同时进行