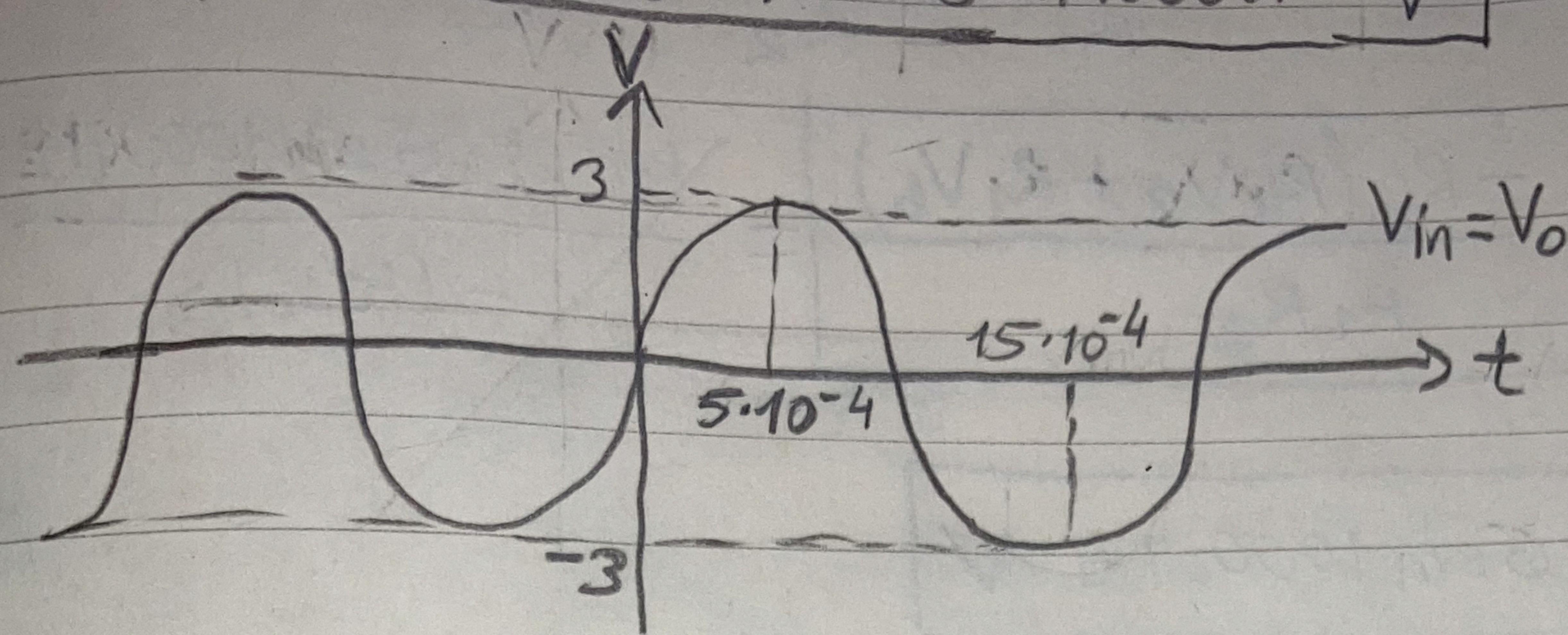


1a

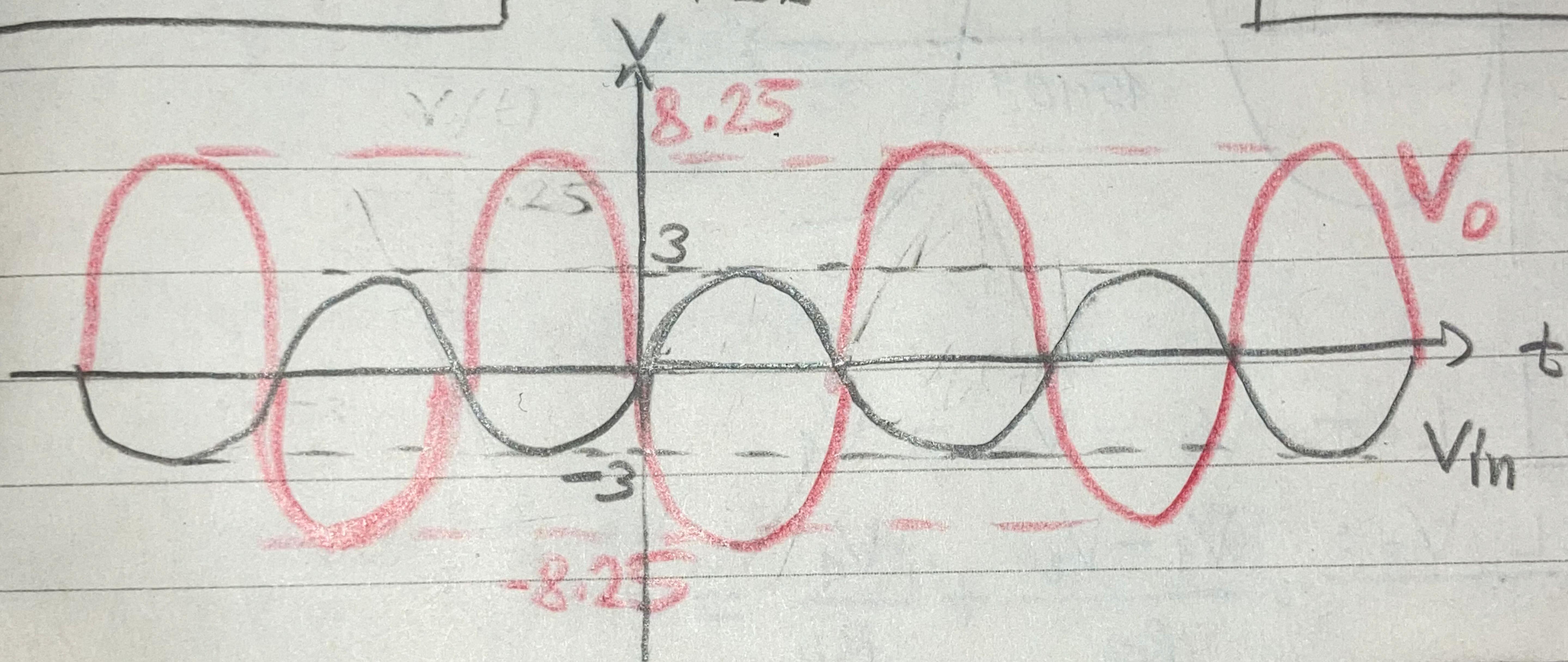
$$V_{in}(t) = V_o(t) = 3 \sin 1000\pi t \text{ V}$$



1b

$$\text{KCL } V_- : \frac{-V_{in}}{R_1} + \frac{-V_o}{R_2} = 0$$

$$\Rightarrow V_o = \frac{-R_2}{R_1} V_{in} = \frac{-3 \cdot 3k}{1 \cdot 2k} \cdot 3 \sin 1000\pi t = -8.25 \sin 1000\pi t \text{ V}$$



1c

$$\text{KCL } V_- : \frac{V_{in}}{R_1} + \frac{V_{in} - V_o}{R_2} = 0 \Rightarrow V_o = \frac{R_1 + R_2}{R_1} V_{in}$$

$$V_o = \frac{13.2k}{1.2k} \cdot 3 \sin 1000\pi t = 33 \sin 1000\pi t$$

