Quiz - 1 Set A

① (a) $I_- = I_+ = 0A$ for ideal op-amp.

(b) for OA-1:

$V_+ \equiv V_- = E_2 = 0V.$

$$\therefore \frac{5-0}{10k} = \frac{0-V_A}{(5k+2k)} \Rightarrow V_A = -3.5V$$

$$I_{R5} = \frac{0-V_A}{R_4+R_5} = 0.5mA$$

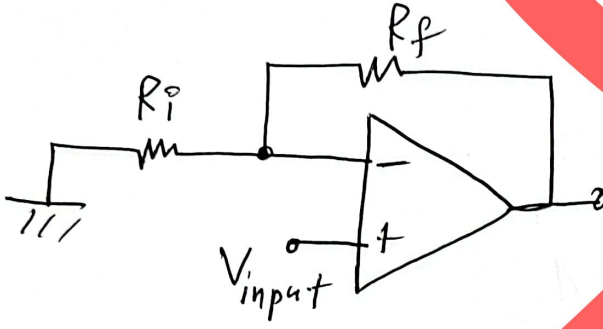
$$V_{BA} = V_B - V_A = I_{R5} \times R_5 \Rightarrow V_B = -2.5V$$

(c) for OA-2: $V_{out} = inf(V_+ - V_-) = inf(-2.5+3.5)$

(+)ve inf value

$= +8V \rightarrow$ saturation voltage

(2) (a) non inverting gain = 2

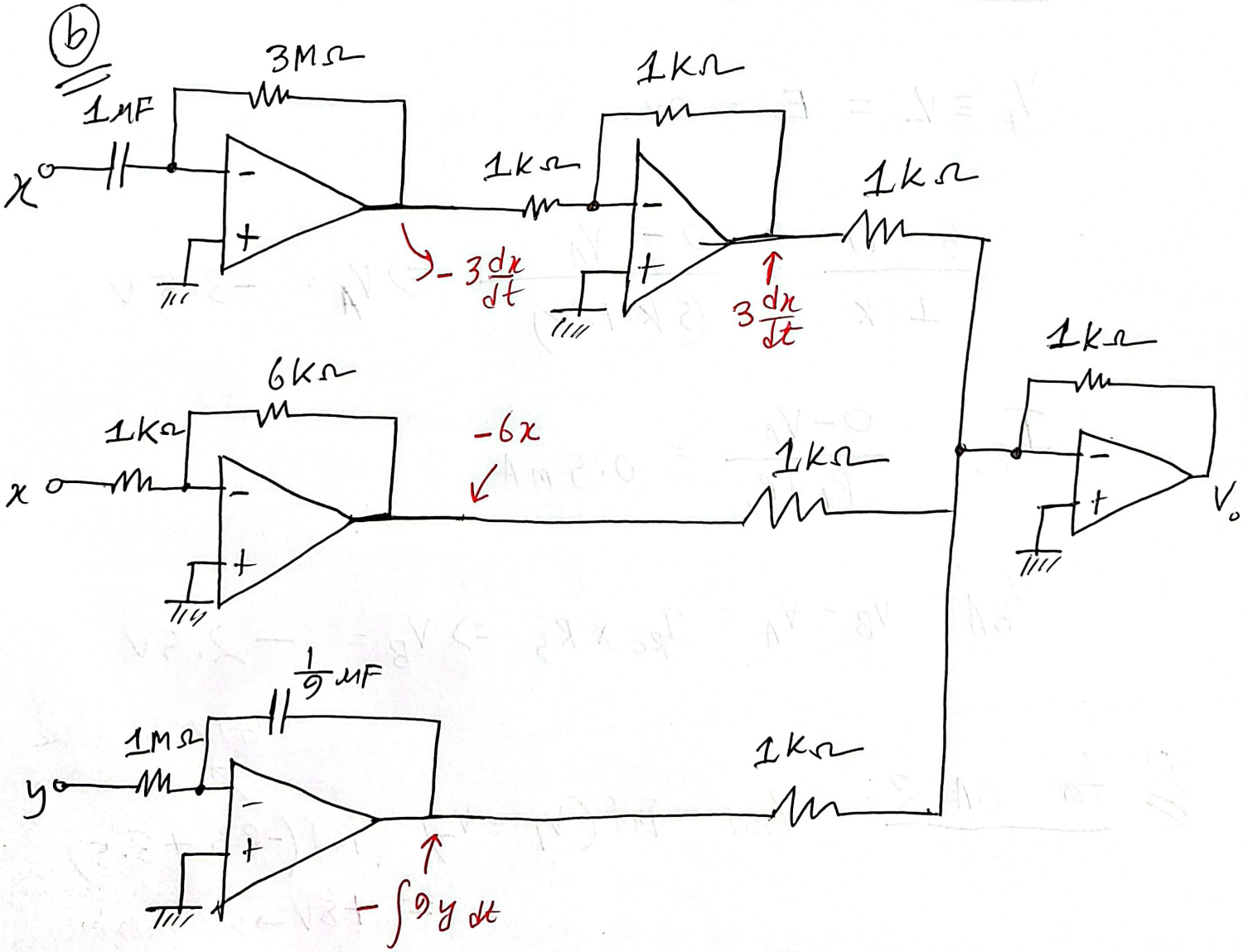


$V_{output} \times \left(1 + \frac{R_f}{R_i}\right)$

gain = 2 = (1+ ...

$\Rightarrow \boxed{R_f = R_i} = 1k\Omega$

(b)



a

Gain = $\frac{1}{2}$ here.