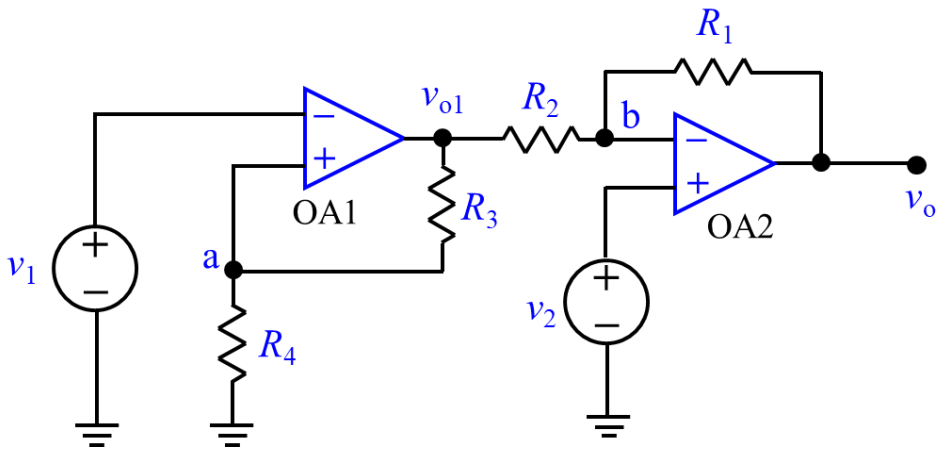
Note for OpAmp Circuit



With the ideal condition of OpAmps ($v^- = v^+$ and $i_{v-} = i_{v+} = 0$), we have:

$$v_a = v_1$$
$$v_b = v_2$$

With the voltage division, we have:

$$v_a = \left(\frac{R_4}{R_3 + R_4}\right) v_{o1} \Rightarrow v_{o1} = \left(\frac{R_3 + R_4}{R_4}\right) v_a$$

Apply KCL at node b, we have:

$$\frac{v_b - v_{o1}}{R_2} + \frac{v_b - v_o}{R_1} = 0$$
$$\frac{v_b}{R_2} - \frac{v_{o1}}{R_2} + \frac{v_b}{R_1} - \frac{v_o}{R_1} = 0$$
$$\Rightarrow v_o = \left(\frac{R_1}{R_2} + 1\right) v_b - \left(\frac{R_1}{R_2}\right) v_{o1} = 0$$
$$\Rightarrow v_o = \left(\frac{R_1}{R_2} + 1\right) v_b - \left(\frac{R_1}{R_2}\right)\left(\frac{R_3 + R_4}{R_4}\right) v_a = 0$$