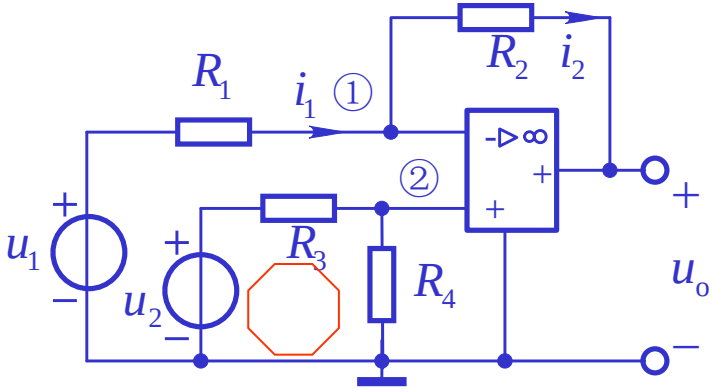
含运算放大器电路的分析

4. 减法器



$$u_{n1} = u_{n2} = \frac{R_4}{R_3 + R_4} u_2$$

$$i_2 = i_1 = \frac{u_1 - u_{n1}}{R_1} = \frac{u_1 - u_{n2}}{R_1}$$

$$u_o = -R_2 i_2 + u_{n2} = \frac{R_2}{R_1} \frac{(1 + R_1 / R_2)}{(1 + R_3 / R_4)} u_2 - \frac{R_2}{R_1} u_1$$

当 $\frac{R_2}{R_1} = \frac{R_4}{R_3} = A$ ⟹ $u_o = A(u_2 - u_1)$