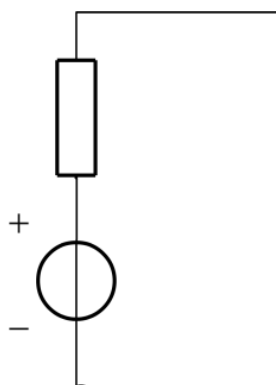


## 2-4 实际电源的两种模型及其等效变换

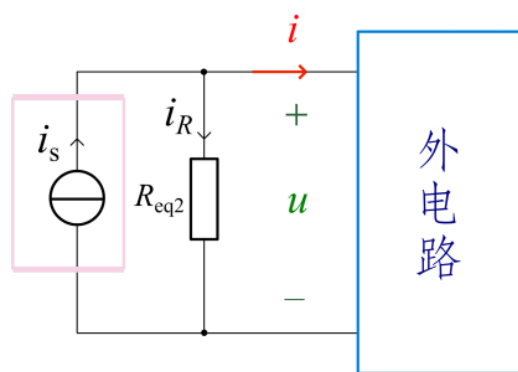
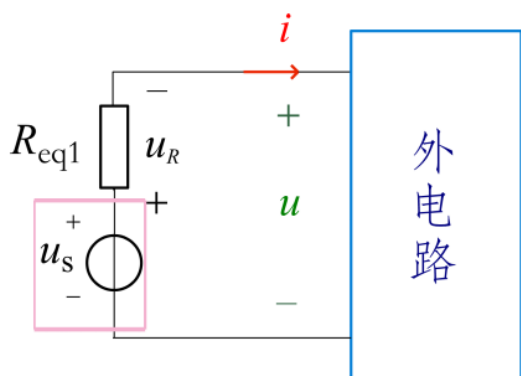
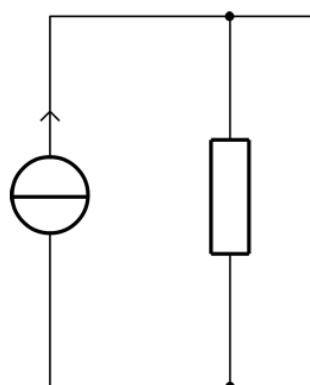
实际电压源：

理想电压源和电阻（内阻） **串联**



实际电流源：

理想电流源和电阻（内阻） **并联**



$$u = u_s - u_R = u_s - R_{eq1}i$$

$$i = i_s - i_R = i_s - \frac{u}{R_{eq2}}$$

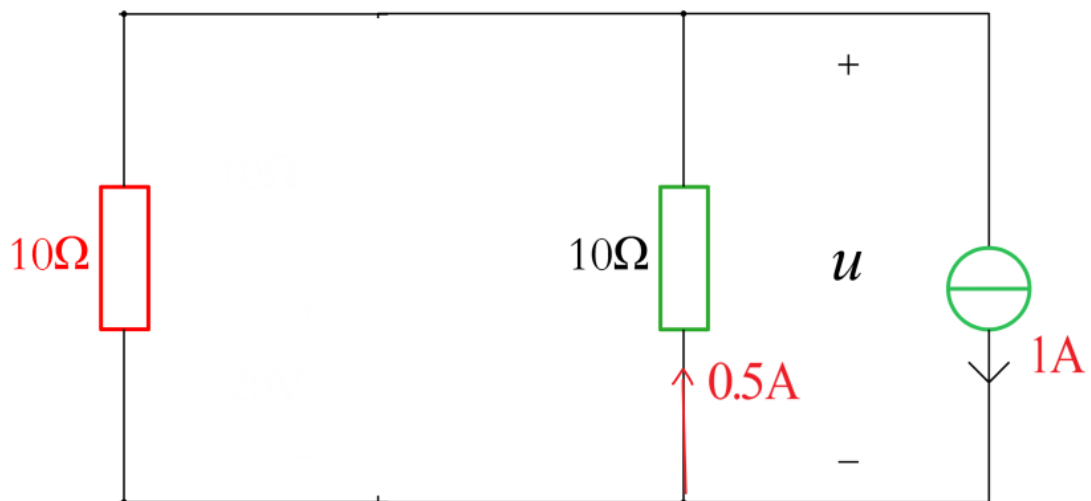
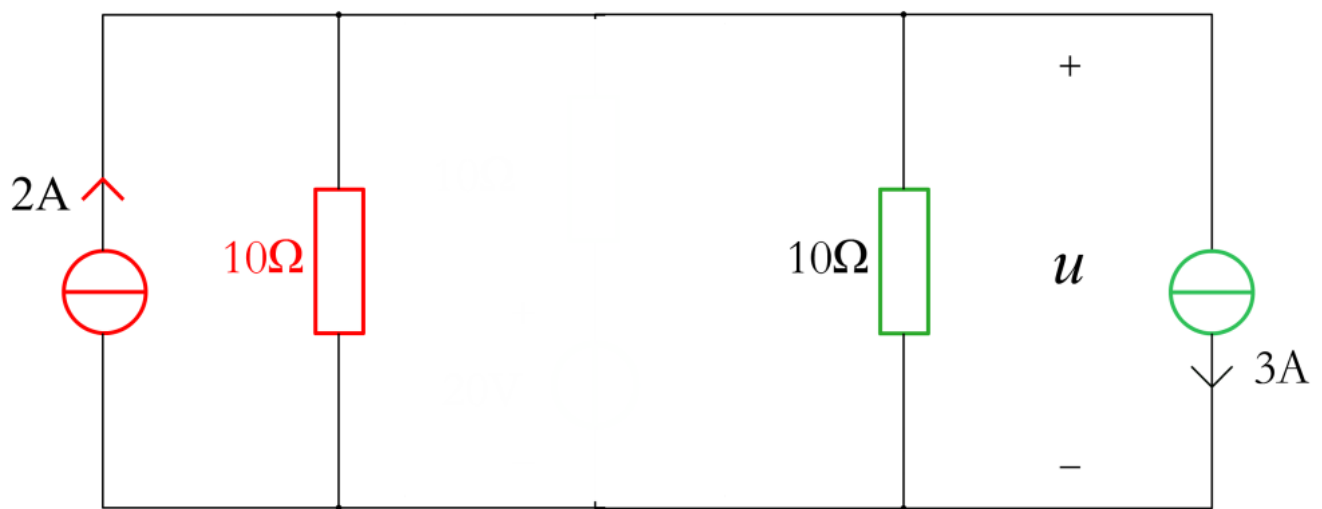
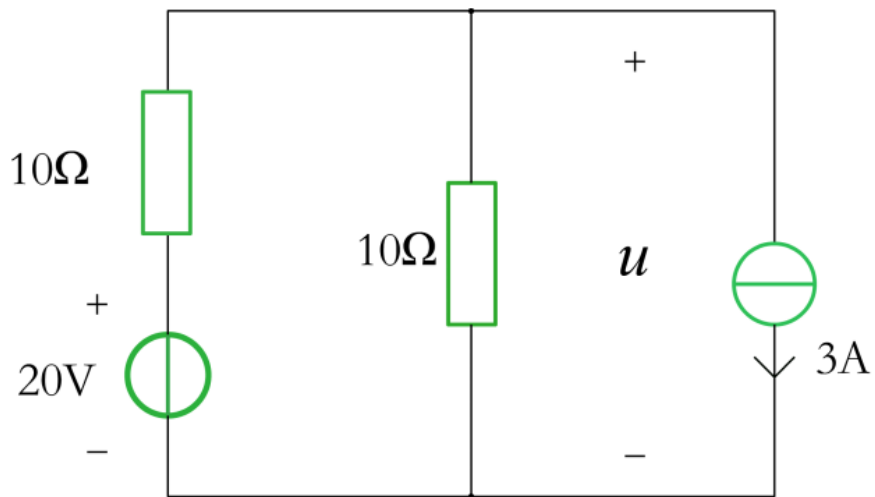
$$u = R_{eq2}i_s - R_{eq2}i$$



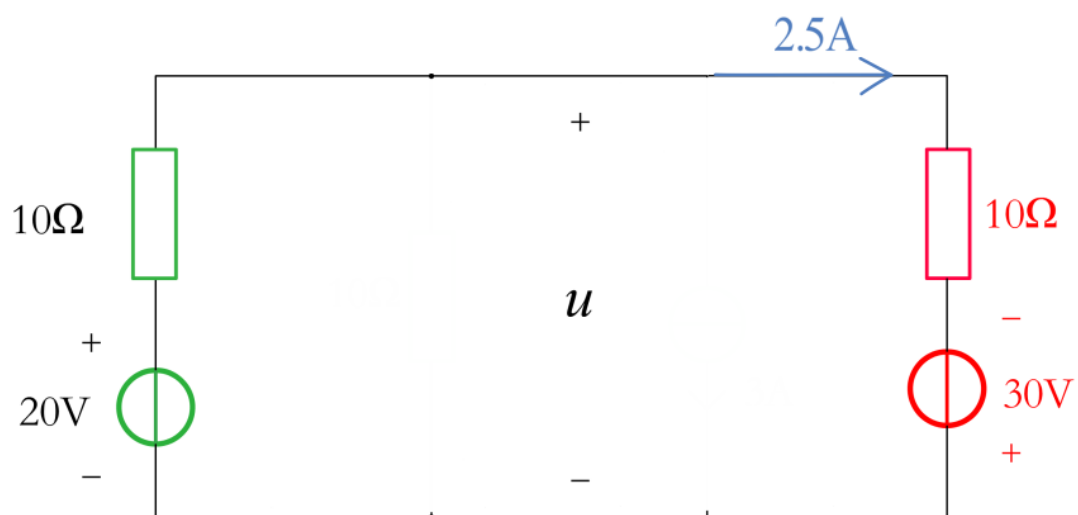
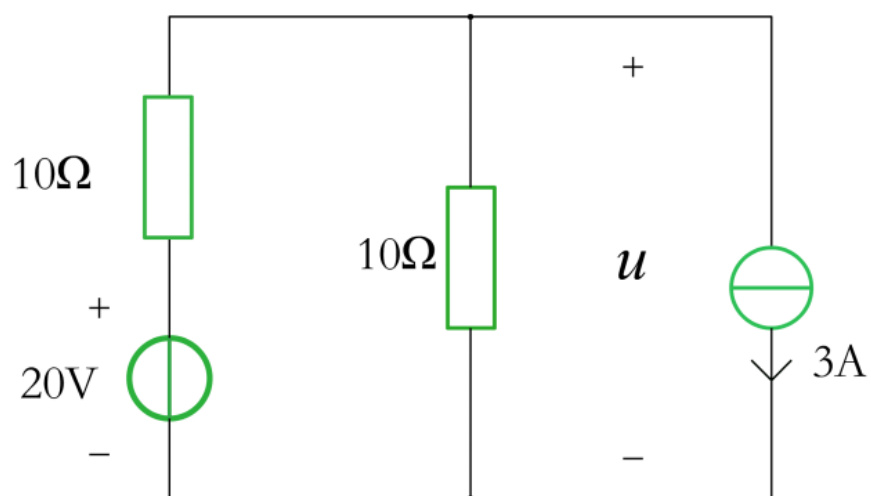
$$R_{eq1} = R_{eq2}$$

$$u_s = R_{eq2}i_s$$

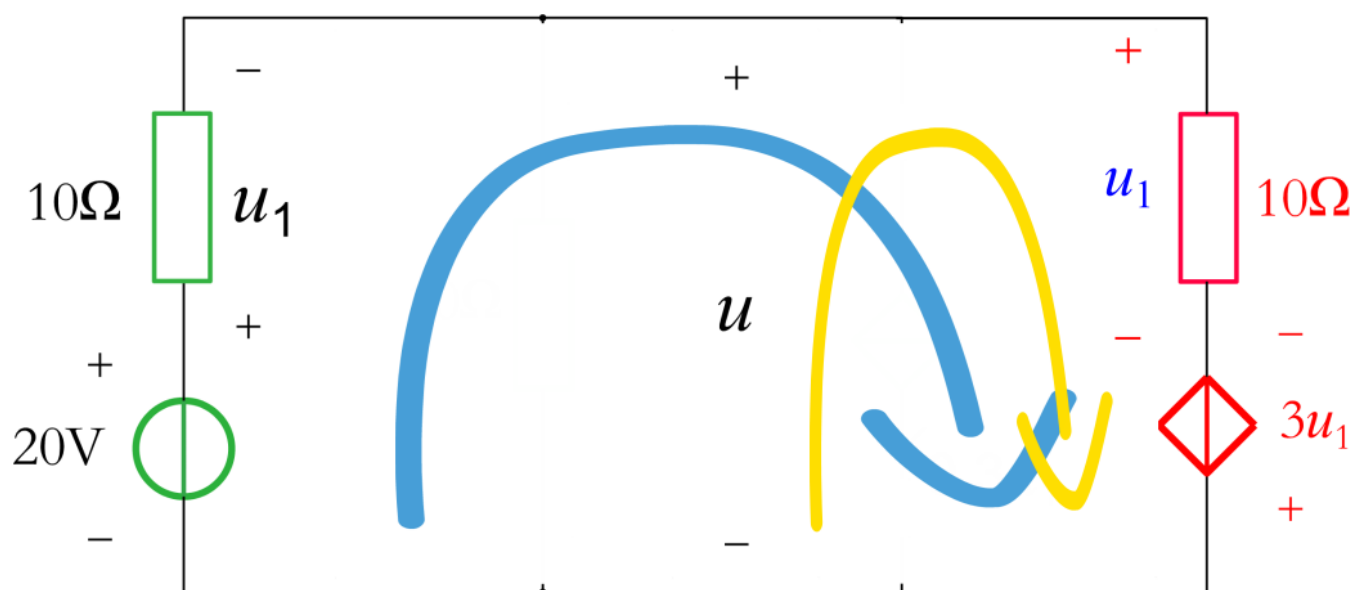
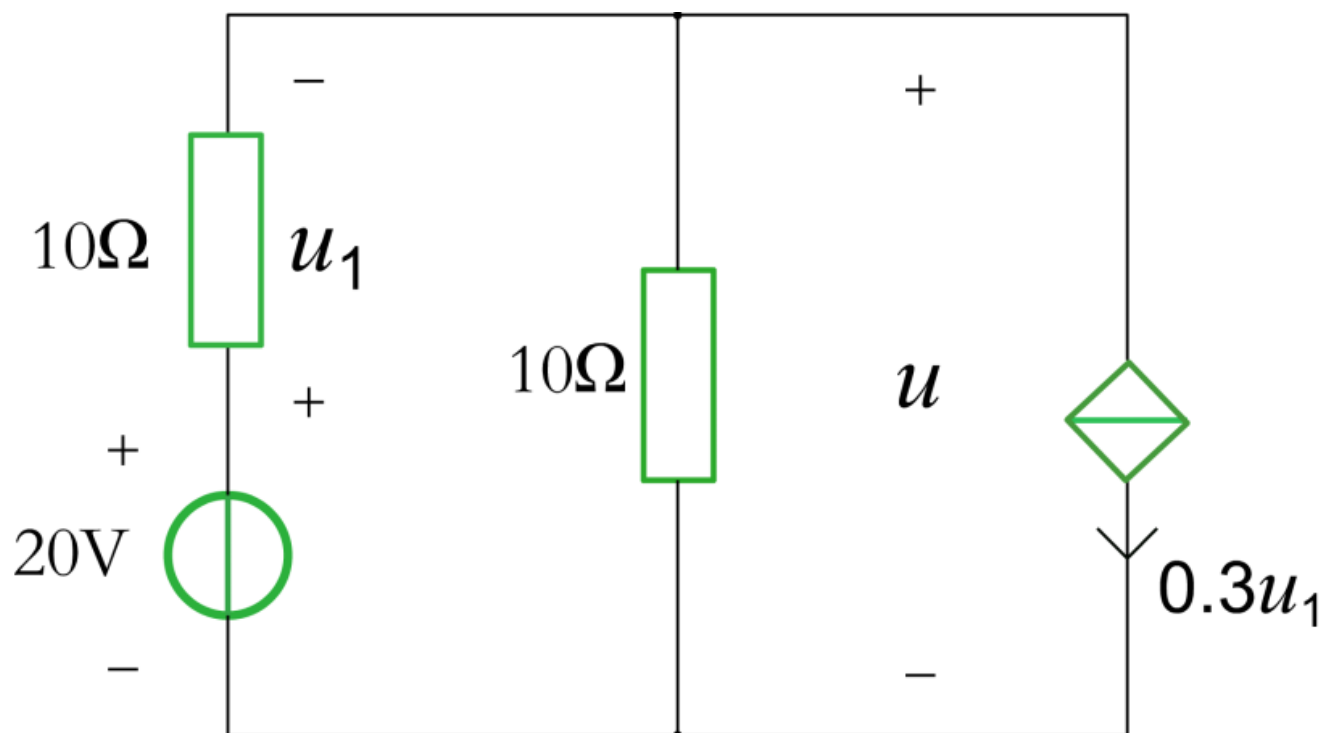
$$i_s = \frac{u_s}{R_{eq2}} = \frac{u_s}{R_{eq1}}$$



$$u = -0.5 \times 10 = -5\text{V}$$



$$u = 10 \times 2.5 - 30 = -5\text{V}$$



$$-20 + u_1 + u_1 - 3u_1 = 0 \quad \longrightarrow \quad u_1 = -20\text{V}$$

$$-u + u_1 - 3u_1 = 0 \quad \longrightarrow \quad u = 40\text{V}$$