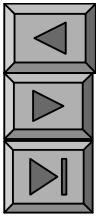
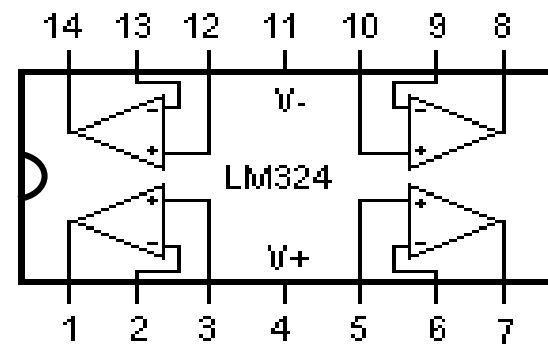
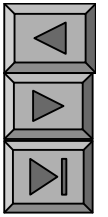


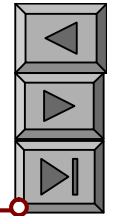
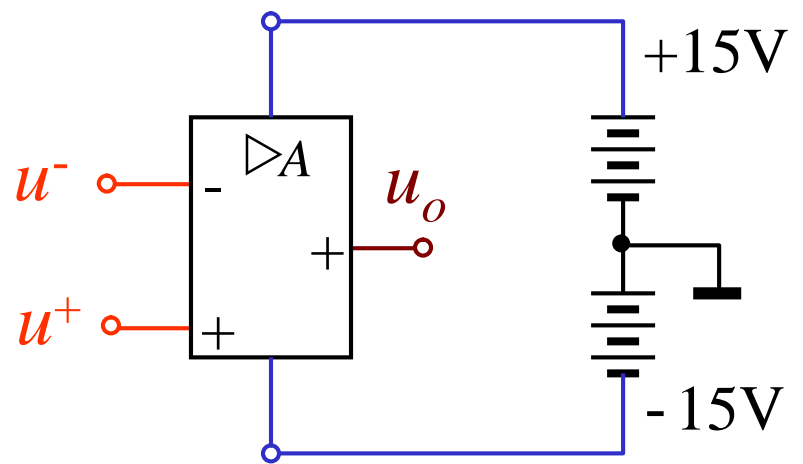
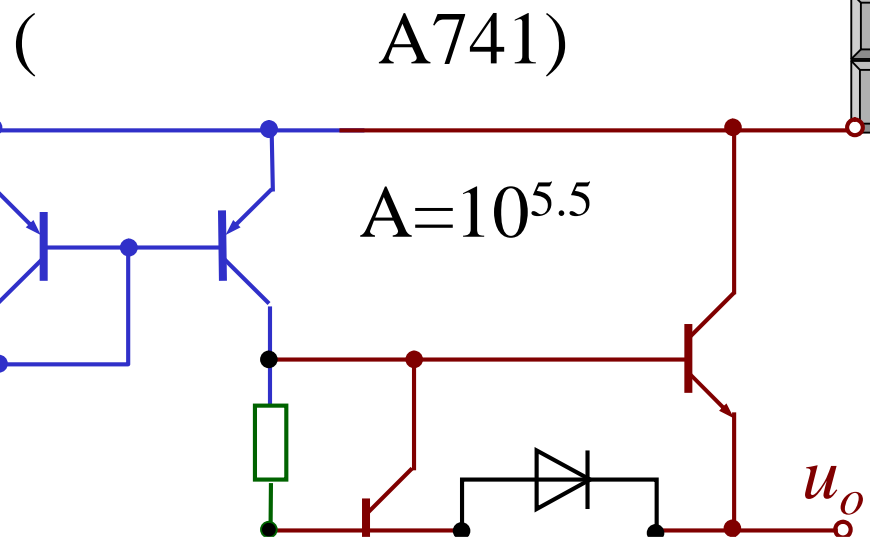
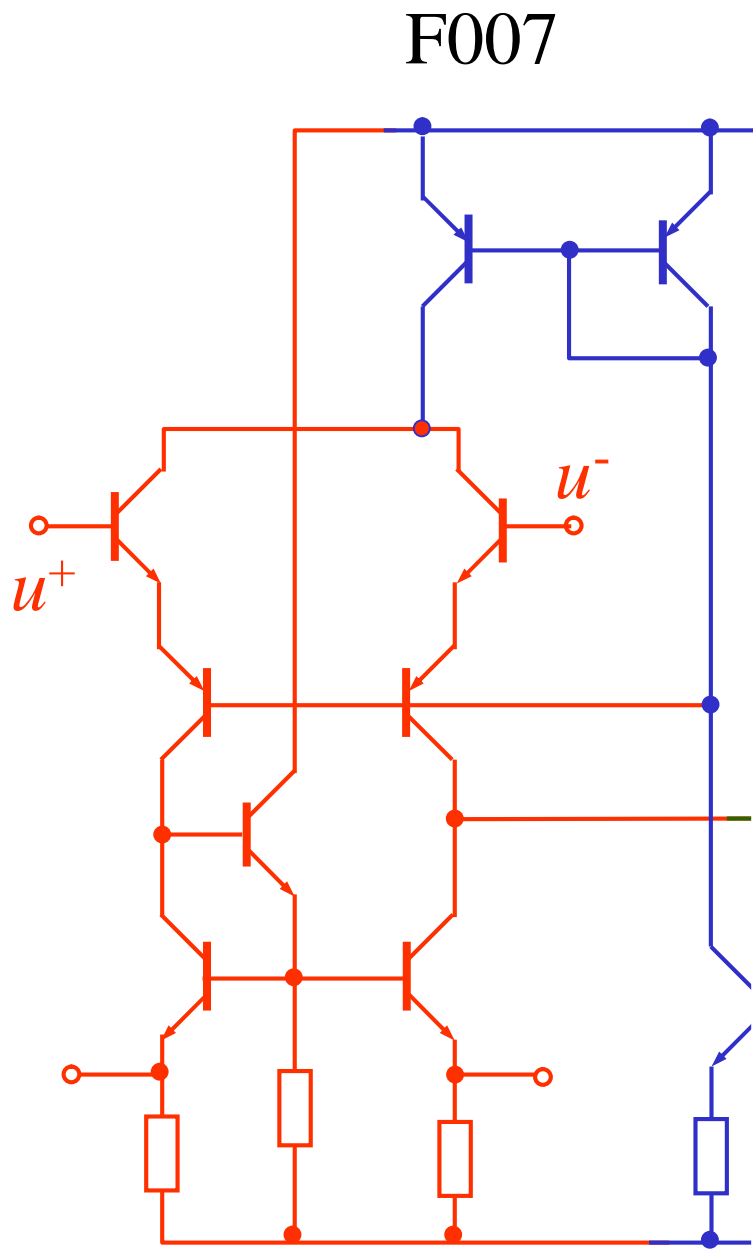
# § 5-1

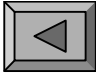


(









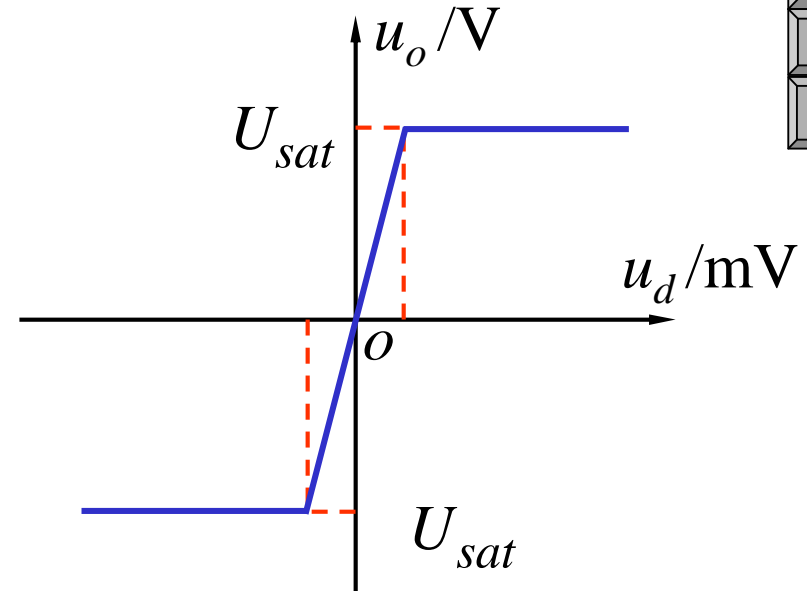
2. ( )

(1)  $|u_d|$   
 $u_o = A u_d$

$$|u_d| \quad \left| \frac{u_o}{A} \right| \quad \left| \frac{\pm 13}{10^{5.5}} \right|$$

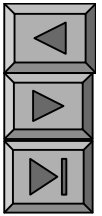
F007	A	$10^{5.5}$
	$E_C$	$\pm 15V$
	$U_{sat}$	$\pm 13V$

A

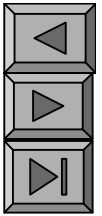
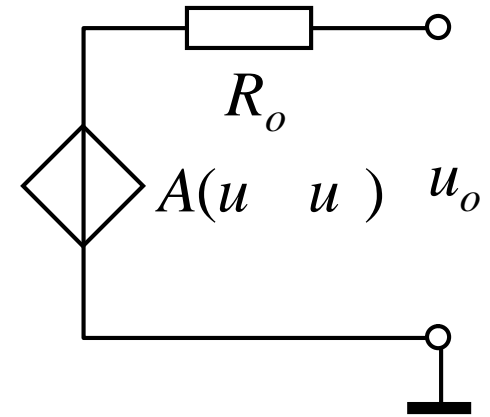
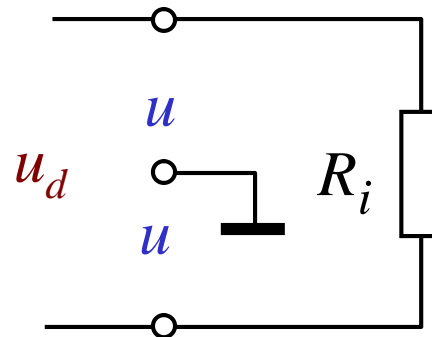
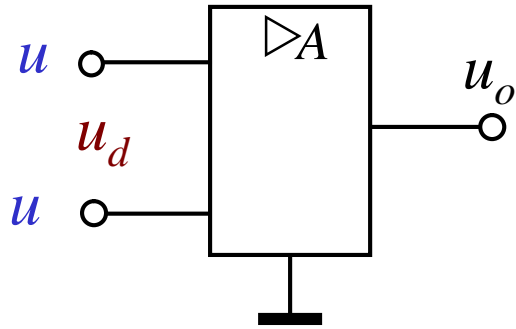


$u_d$

(2)  $|u_d|$   
 $u_o = \pm U_{sat}$   
 $u_d$



3.



$R_i$

$10^3 \quad 10^{12}$

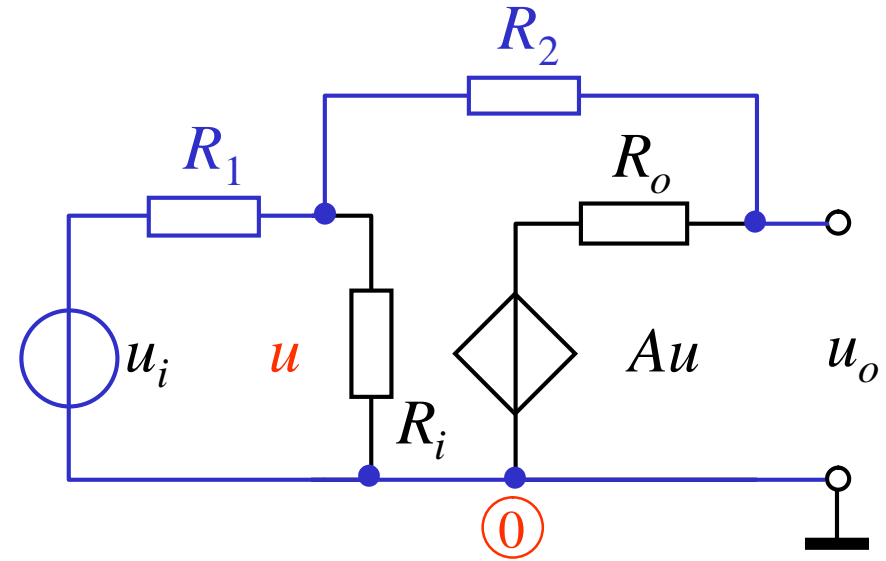
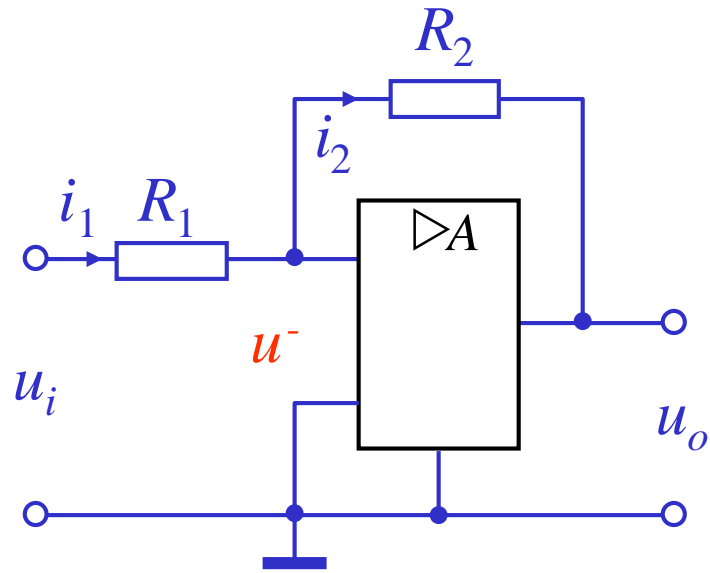
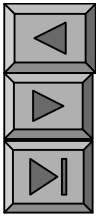
VCVS

$u_o$

$R_o$

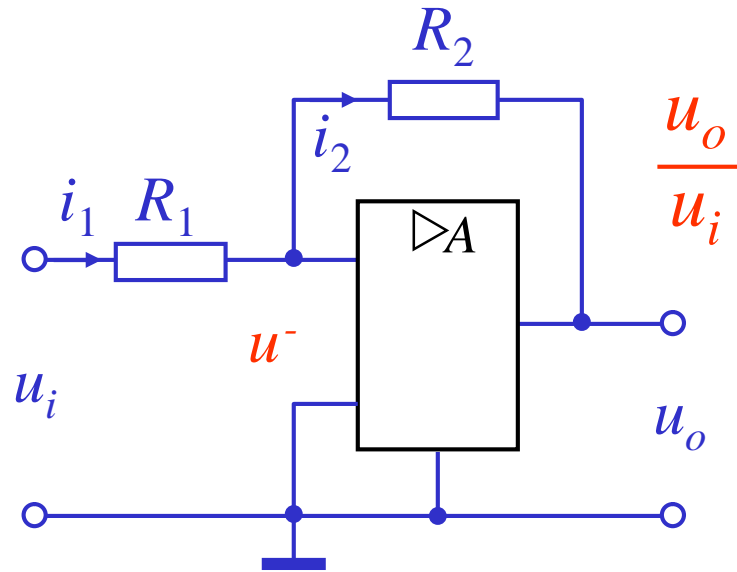
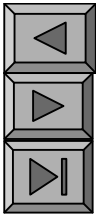
( )

# § 5 2



$$\begin{cases}
 \left[ \begin{array}{cc} \frac{1}{R_1} & \frac{1}{R_2} \\ \frac{1}{R_i} & \frac{1}{R_2} \end{array} \right] u + \frac{1}{R_2} u_o = \frac{u_i}{R_1} \\
 \frac{1}{R_2} u + \left[ \begin{array}{cc} \frac{1}{R_o} & \frac{1}{R_2} \end{array} \right] u_o = \frac{Au}{R_o}
 \end{cases}$$





$$\frac{R_2}{R_1} \frac{1}{1 - \frac{\begin{bmatrix} 1 & \frac{R_2}{R_o} \end{bmatrix} \begin{bmatrix} 1 & \frac{R_2}{R_1} & \frac{R_2}{R_i} \end{bmatrix}}{A \frac{R_o}{R_2}}}$$

$$A = 10^7$$

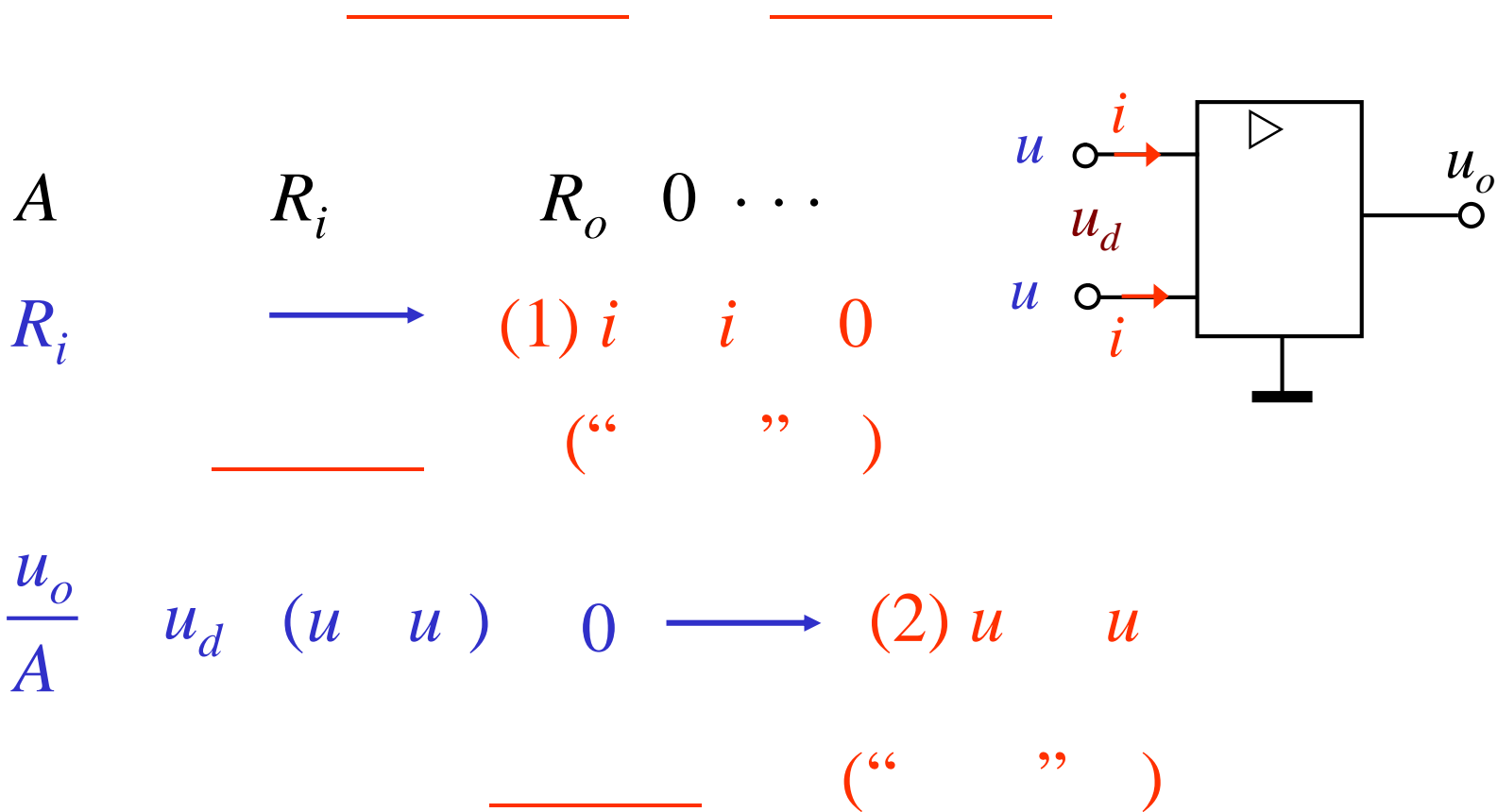
$$\frac{u_o}{u_i} = -\frac{R_2}{R_1} \quad (1)$$

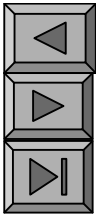
$$u_o = -\frac{R_2}{R_1} u_i$$

A

$R_1$   $R_2$

# § 5-3

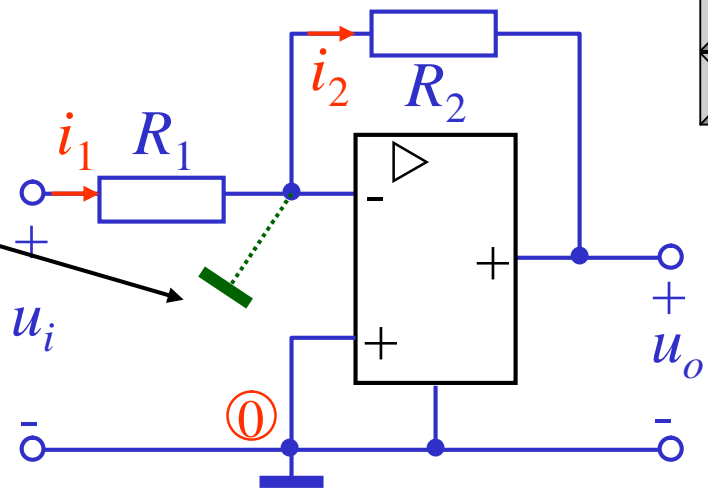




2

1  $i_1 = i_2$

$$\frac{u_i}{R_1} = - \frac{u_o}{R_2} \longrightarrow \frac{u_o}{u_i} = - \frac{R_2}{R_1}$$

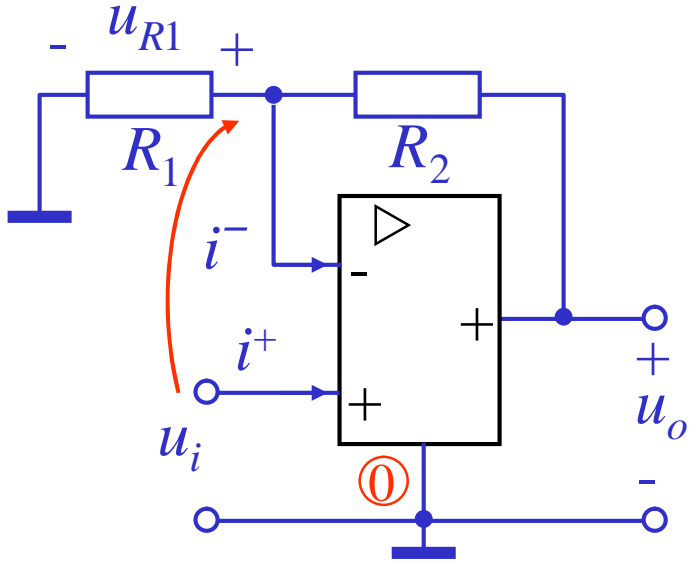


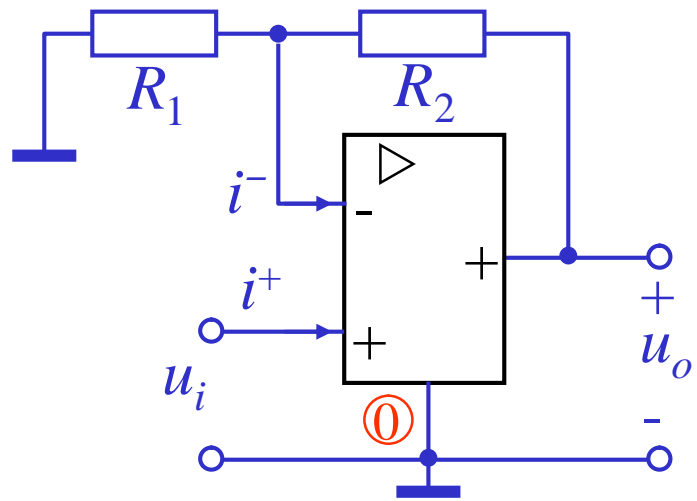
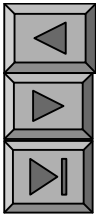
1  $R_1$   $R_2$

$u_{R1}$   $\frac{R_1}{R_1+R_2} u_o$

2  $u_{R1}$   $u_i$

$$u_o \frac{R_1+R_2}{R_1} u_i \longrightarrow \frac{u_o}{u_i} = 1 \frac{R_2}{R_1}$$

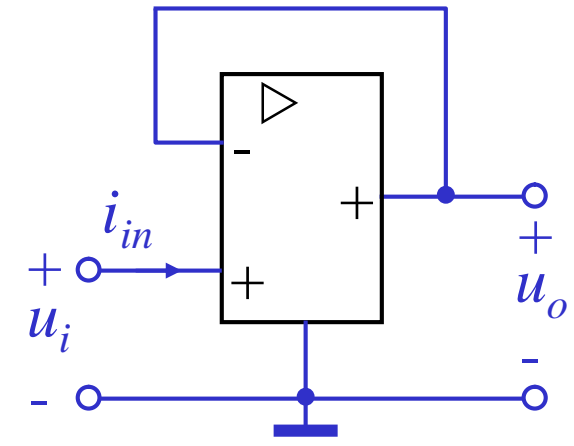




$$\frac{u_o}{u_{in}} = 1 - \frac{R_2}{R_1}$$

$R_2=0$

$R_1$



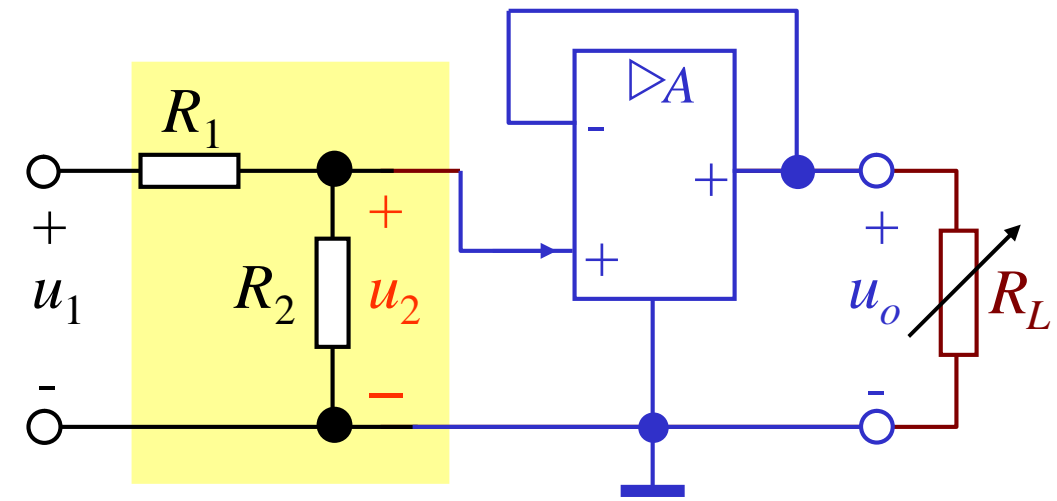
$$u_o = u_i$$

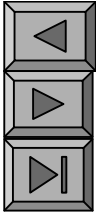
$R_i$  “ ”

$u_o$

$R_L$

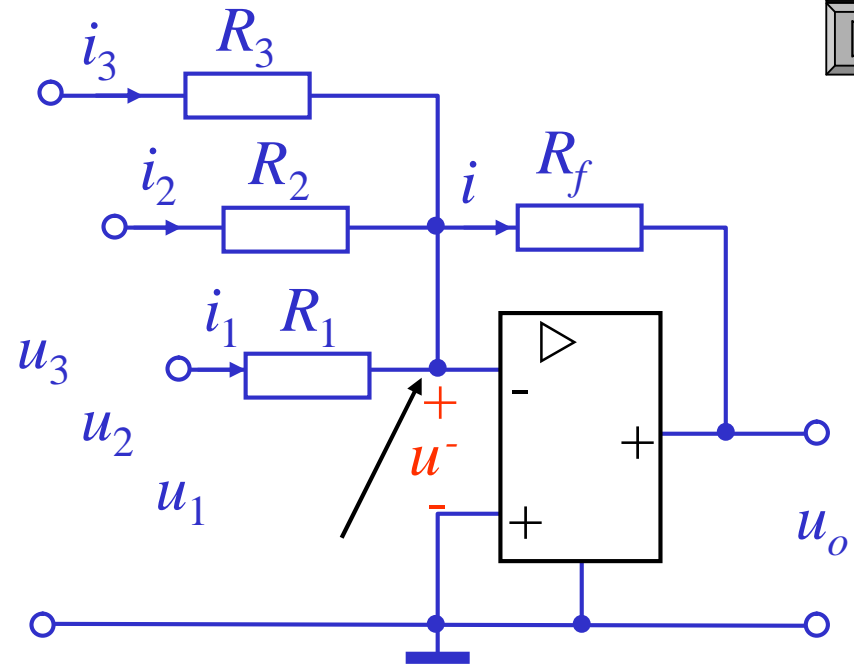
$u_2$  (  $u_o$  )





$$\begin{array}{cccc}
 i & 0 & & \\
 \therefore i_1 & i_2 & i_3 & i \\
 \frac{u_1}{R_1} & \frac{u_2}{R_2} & \frac{u_3}{R_3} & \frac{u_o}{R_f}
 \end{array}$$

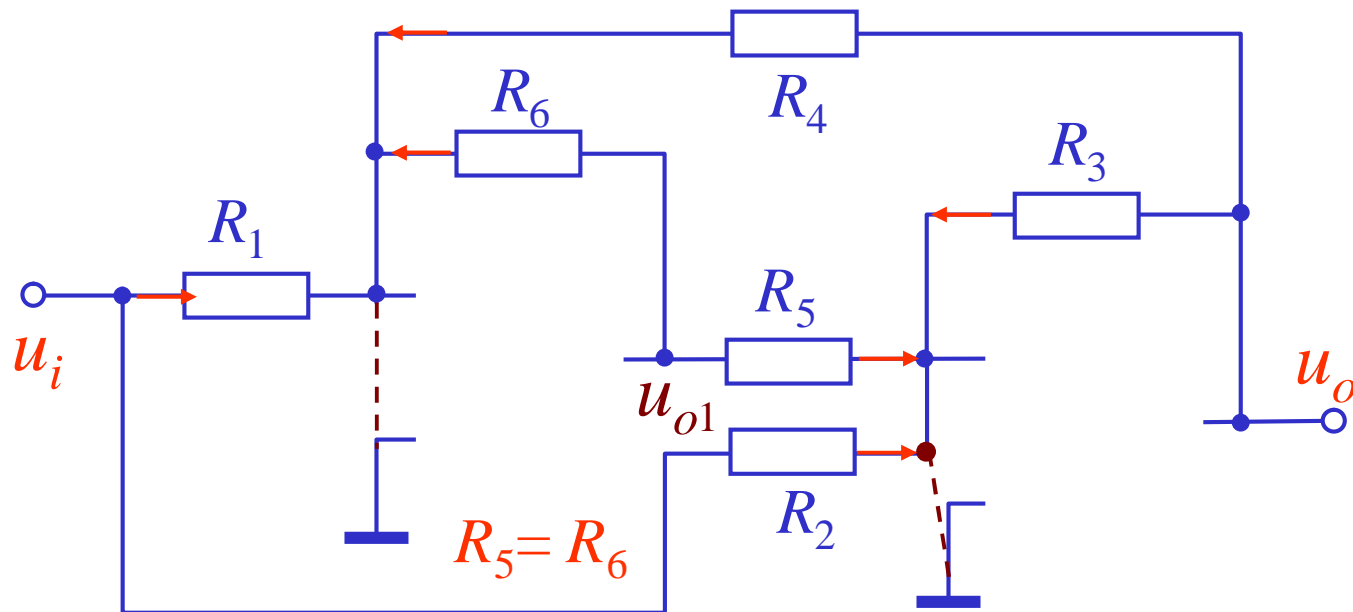
$$u_o \left( \frac{R_f}{R_1} u_1 \quad \frac{R_f}{R_2} u_2 \quad \frac{R_f}{R_3} u_3 \right)$$



:

$$\begin{array}{cccc}
 R_1 & R_2 & R_3 & R_f \\
 u_o & (u_1 & u_2 & u_3)
 \end{array}
 \left( \begin{array}{c} \\ \\ \\ \end{array} \right) u_{n1} \frac{u_1}{R_1} \quad \frac{u_2}{R_2} \quad \frac{u_3}{R_3} \quad \frac{u_o}{R_f} \quad 0$$

5-3



$$\left. \begin{array}{ccc} \frac{u_i}{R_1} & \frac{u_o}{R_4} & \frac{u_{o1}}{R_6} \\ \frac{u_i}{R_2} & \frac{u_o}{R_3} & \frac{u_{o1}}{R_5} \end{array} \right\} \longrightarrow \frac{u_i}{R_1} \quad \frac{u_i}{R_2} \quad \frac{u_o}{R_4} \quad \frac{u_o}{R_3}$$

$$(G_1 \quad G_2)u_i \quad (G_3 \quad G_4)u_o \quad \frac{u_o}{u_i} \quad \frac{(G_1 \quad G_2)}{(G_3 \quad G_4)}$$

5 7

$u_{s1}$   $u_{s2}$

$u_o$

$u_{s1}$

$u_o$

