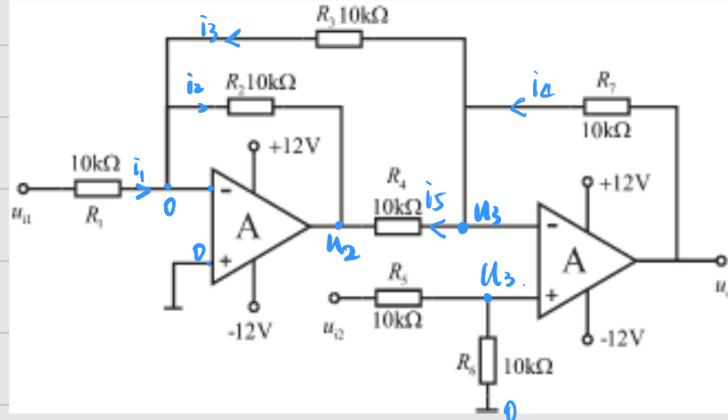$$u = \frac{1}{2} u_{i2}$$

$$\frac{u - u_o}{R} + \frac{u}{R} + \frac{u - u_{i1}}{R} = 0.$$

$$\frac{1}{2} u_{i2} - u_o + \frac{1}{2} u_{i2} + \frac{1}{2} u_{i2} - u_{i1} = 0.$$

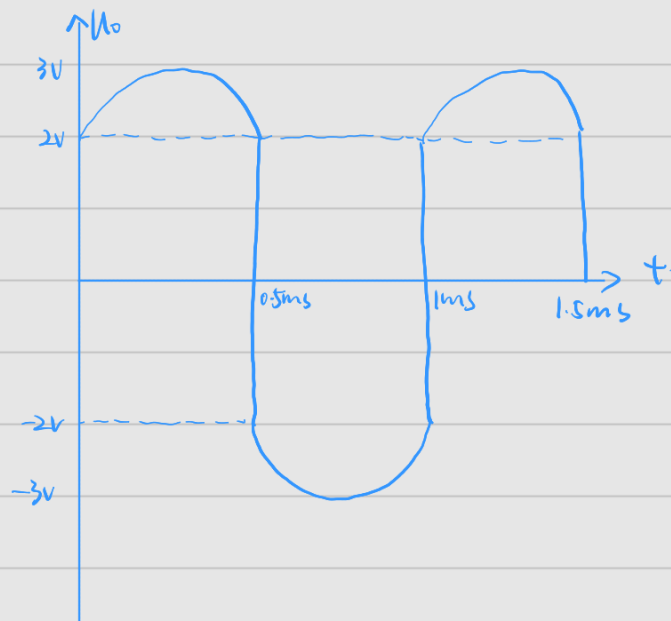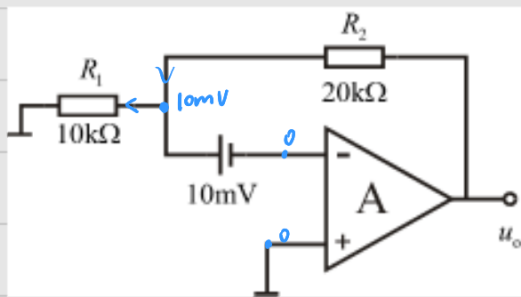$$u_o = \frac{3}{2} u_{i2} - u_{i1}$$

$$u_3 = \frac{R}{2R} u_{i2} = \frac{1}{2} u_{i2}$$

$$i_3 = \frac{u_2}{R} \qquad i_2 = \left( \frac{u_{i1}}{R} + \frac{u_3}{R} \right) \qquad u_2 = -u_{i1} - u_3.$$

$$i_5 = \frac{2u_3 + u_{i1}}{R} \qquad i_4 = \frac{3u_3 + u_{i1}}{R}$$
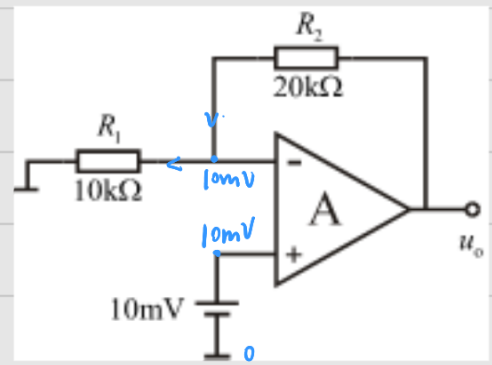
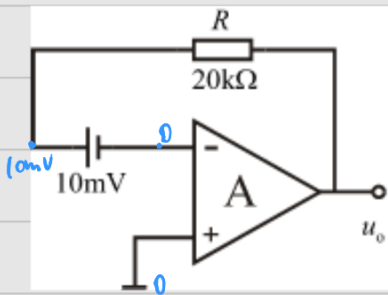$$u_o = 4u_3 + u_{i1} = u_{i1} + 2u_{i2}$$

**(a)**

$R_1$ 10kΩ  10mV
$R_2$ 20kΩ
10mV  0  0
A  −  +
$u_o$

$U_0 = U_1 + U_1 \times \dfrac{R_2}{R_1} = 30\,mV$

**(b)**

$R_2$ 20kΩ
$R_1$ 10kΩ  10mV
V
10mV
10mV
A  −  +
$u_o$

$U_0 = U_1 + \dfrac{U_1}{R_1} \times R_2 = 30\,mV$

**(c)**

R 20kΩ
10mV  10mV  0
A  −  +
0
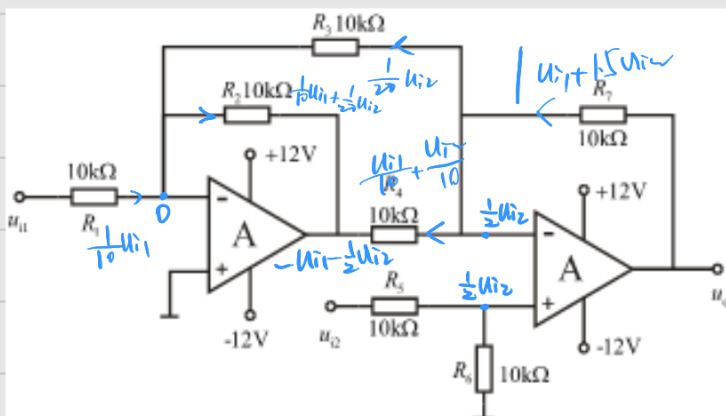$u_o$

$U_0 = U_1 = 10\,mV$

**(d)**
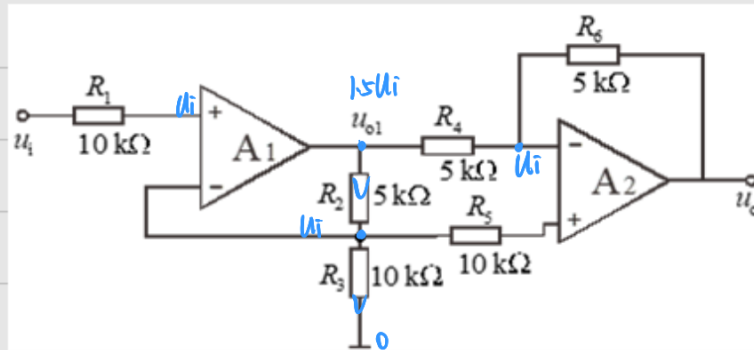
R 20kΩ
10mV
10mV
10mV
A  −  +
$u_o$
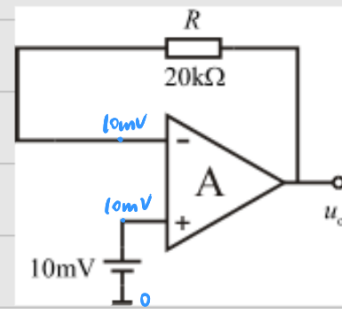
$U_0 = U_1 = 10\,mV$
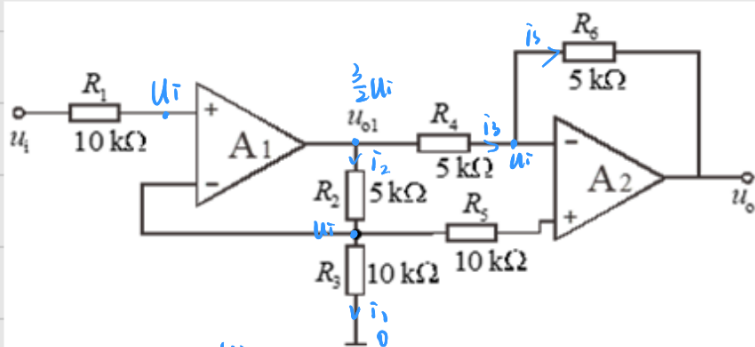
$i_2 = i_1 = \dfrac{U_i}{R_3}$  $U_{o1} = U_i + \dfrac{U_i}{R_3} \cdot R_2 = \dfrac{3}{2} U_i$

$i_3 = \dfrac{U_{o1} - U_i}{R_4}$  $U_o = U_i - i_3 R_6 = \dfrac{1}{2} U_i$

$$U_{01} = 1.5 U_i \qquad U_0 = 0.5 U_i$$

C:  $i = \dfrac{U_i}{R_1}$

$$i = C \dfrac{dU}{dt}$$

$$U = L \cdot \dfrac{di}{dt}$$

电容. $U = \dfrac{1}{jWC} i$

$$\dfrac{\dfrac{1}{jWC} \times R_2}{\dfrac{1}{jWC} \times R_2}$$