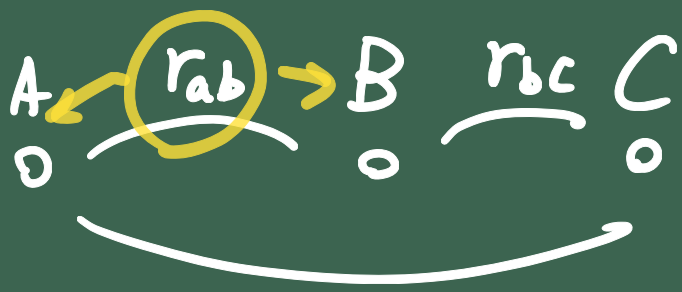
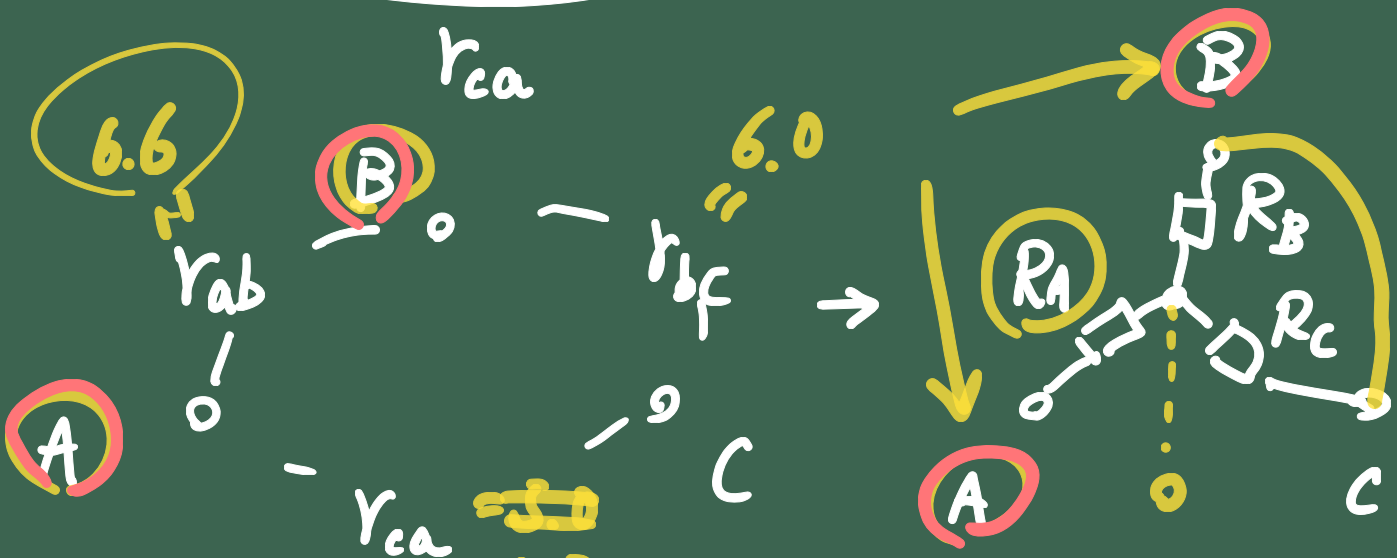
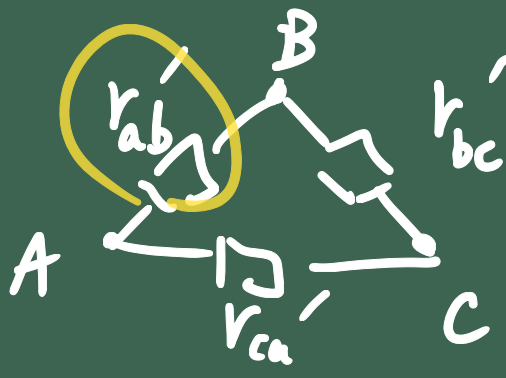
H14 問11







$$r_{ab} = \frac{r_{ab}'(r_{bc}'+r_{ca}')}{r_{ab}'+(r_{bc}'+r_{ca}')} = 6.6$$

$$r_{ab} = R_A + R_B = 6.6$$

$$r_{bc} = R_B + R_C = 6.0$$

$$r_{ca} = R_C + R_A = 5.2$$

+

$2(R_A + R_B + R_C) = 17.8$

$R_A + R_B + R_C = 8.9$

$R_B + R_C = 6.0$ (−)

$R_A = 2.9 \ [\Omega]$

$R_A + R_B + R_C = 8.9$

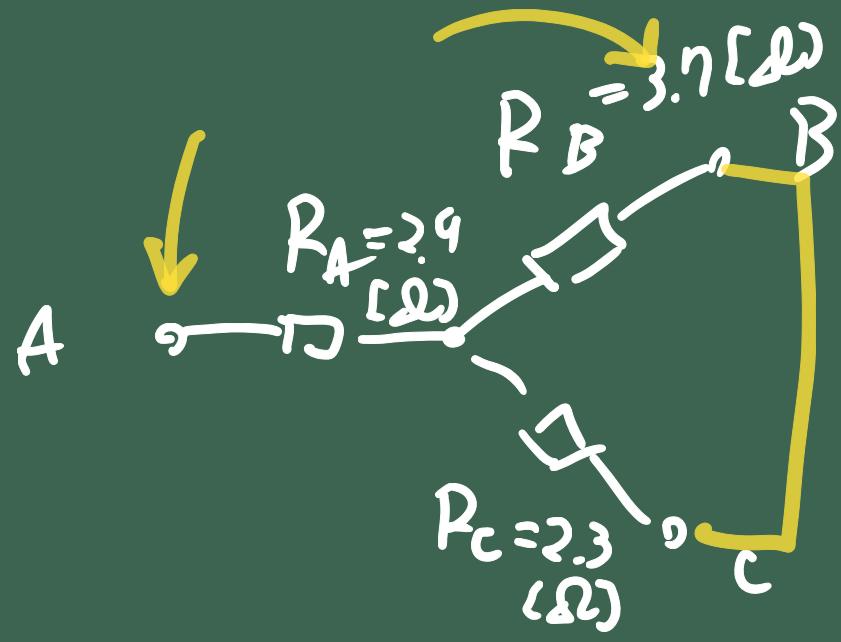
$R_A + R_C = 5.2$ (−)

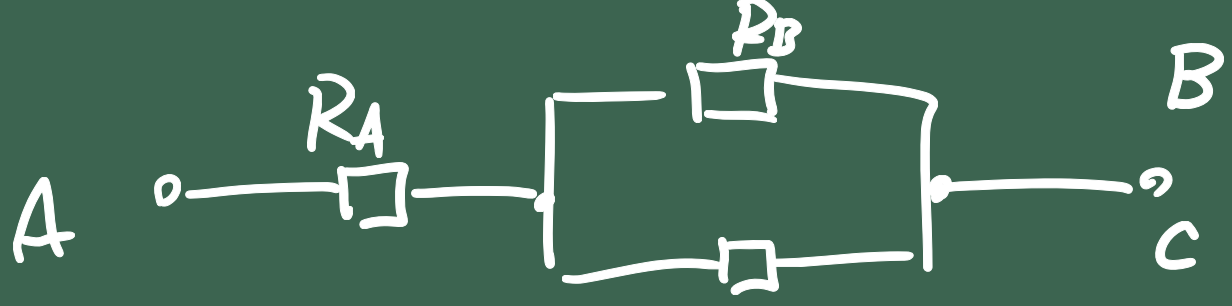
$R_B = 3.7 \ [\Omega]$

$R_A + R_B + R_C = 8.9$

$R_A + R_B = 6.6$ (−)

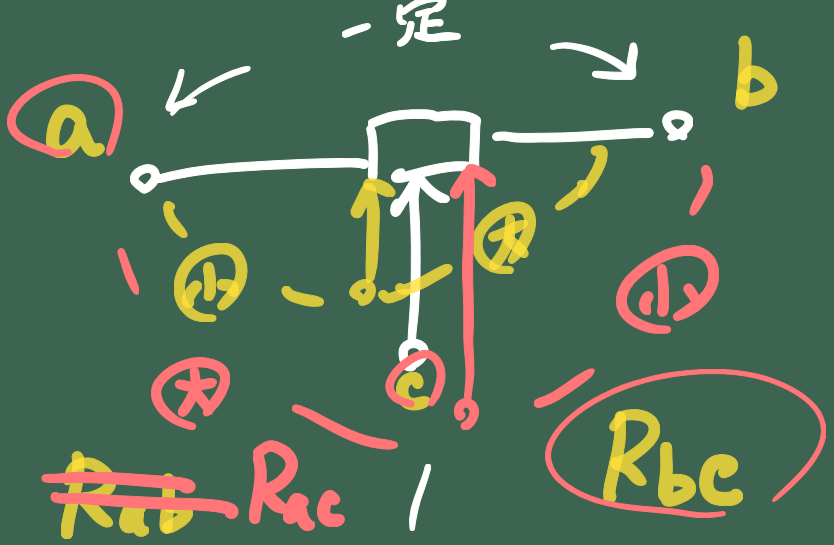
$R_C = 2.3 \ [\Omega]$

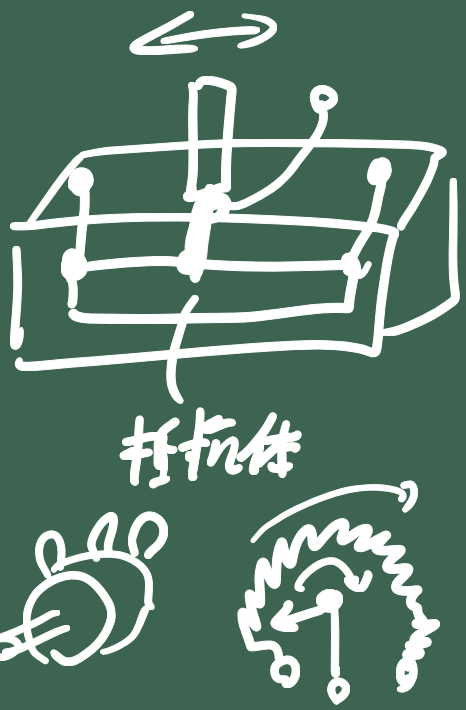


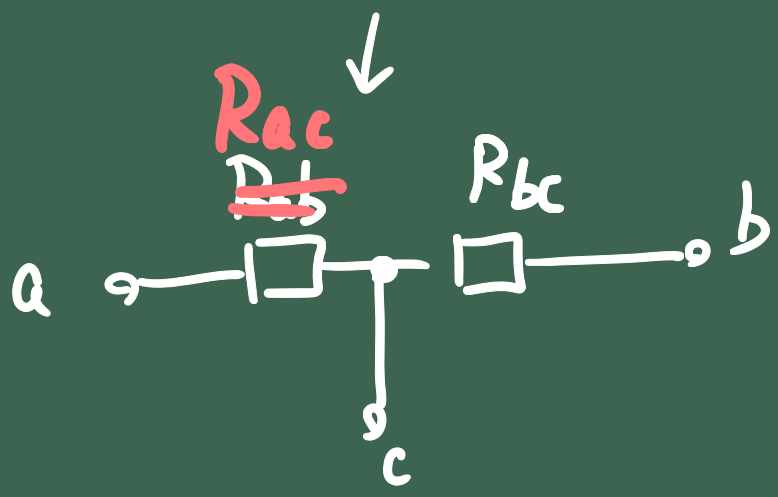


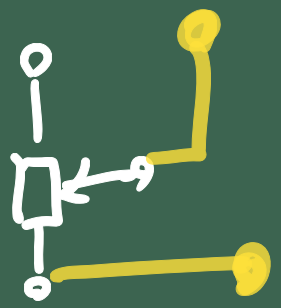
$$R_A + \frac{R_B R_C}{R_B + R_C} = 2.9 + \frac{3.7 \times 2.3}{3.7 + 2.3} = 6.0 \fallingdotseq 4.3\ [\Omega]$$

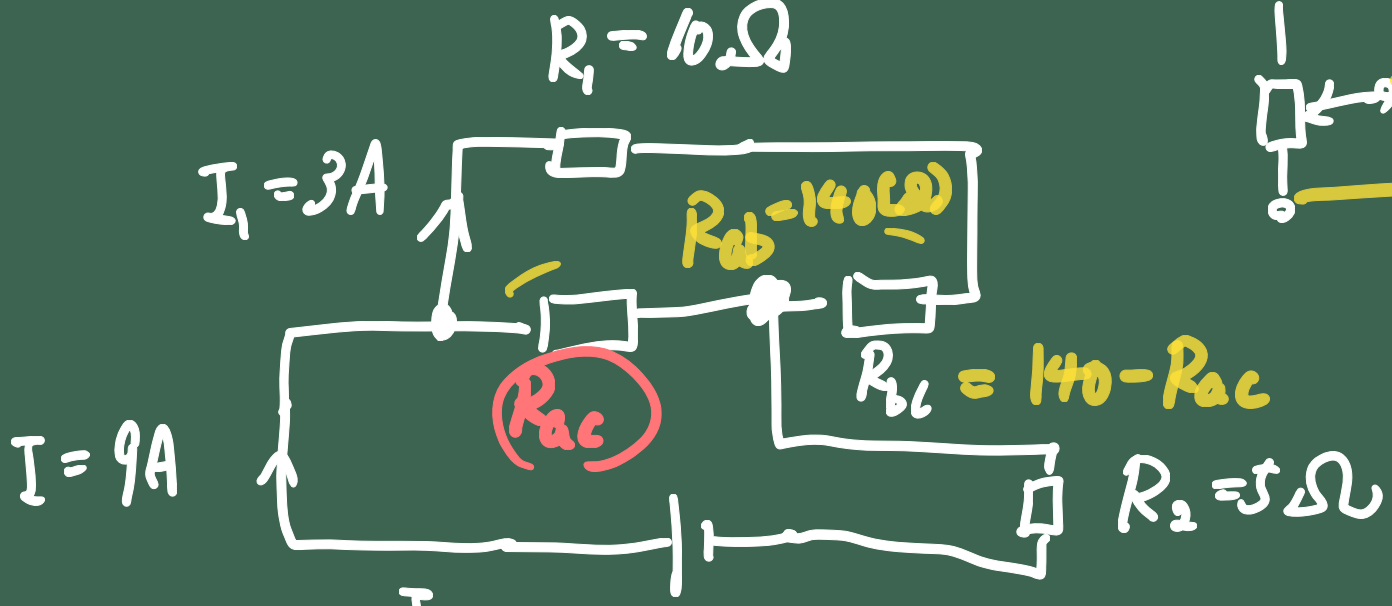
H門 問5

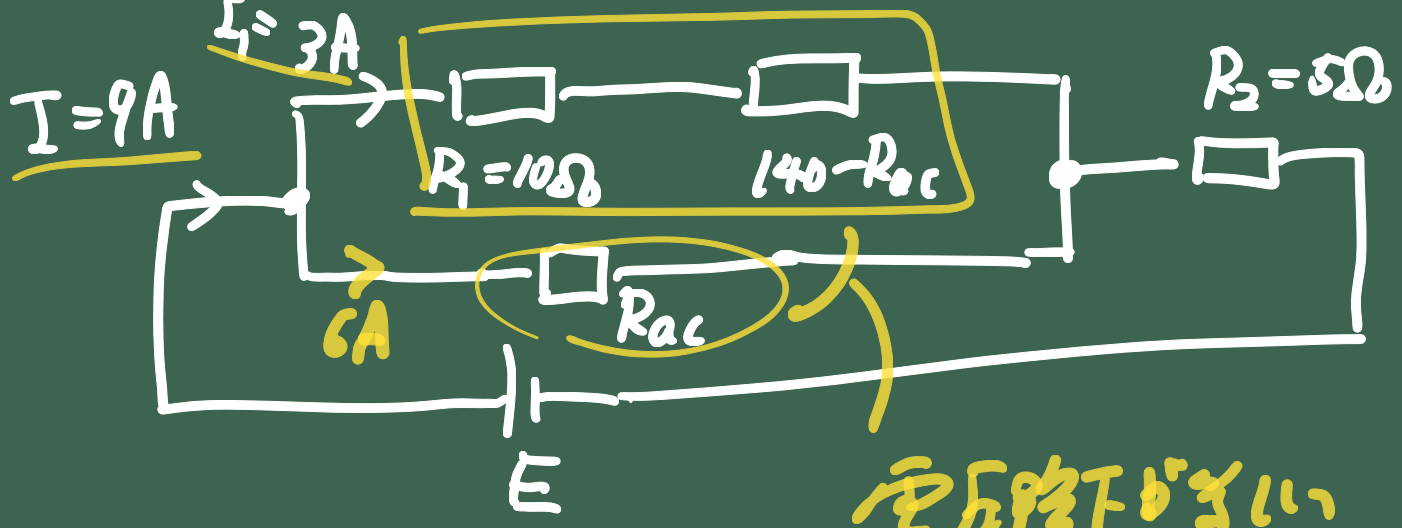












電圧降下がない

$3 \cdot (10 + 140 - R_{ac}) = 2R_{ac}$

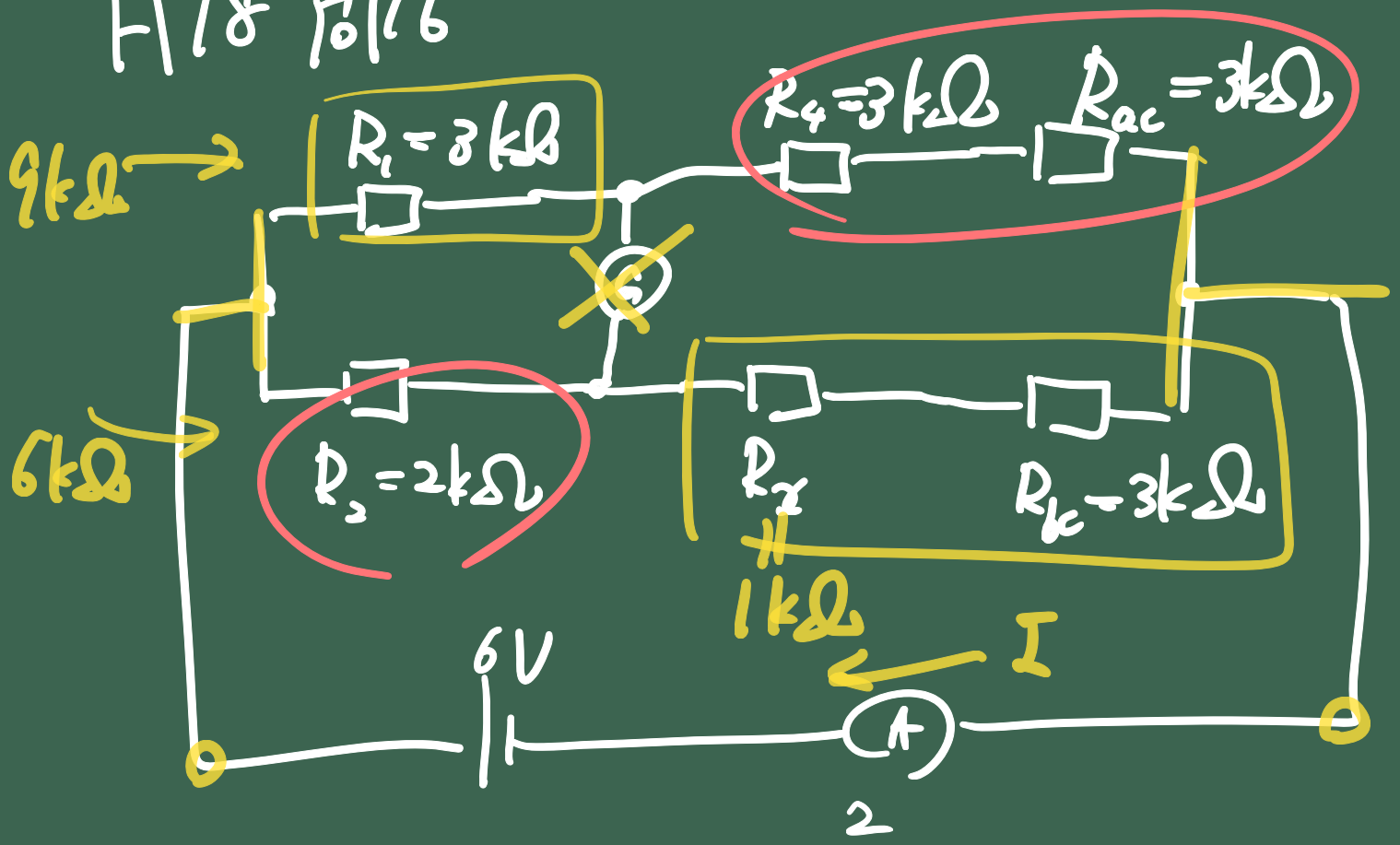
$150 - R_{ac} = 2R_{ac}$

$3R_{ac} = 150 \rightarrow R_{ac} = 50$ [Ω]

$R_{bc} = 140 - R_{ac} = 140 - 50 = 90\ [\Omega]$

$R_{ac} : R_{bc} = 50 : 90 = 5 : 9$

H18 問16



2

$3 \cdot (R_x + 3) = 2 \cdot (3+3)$

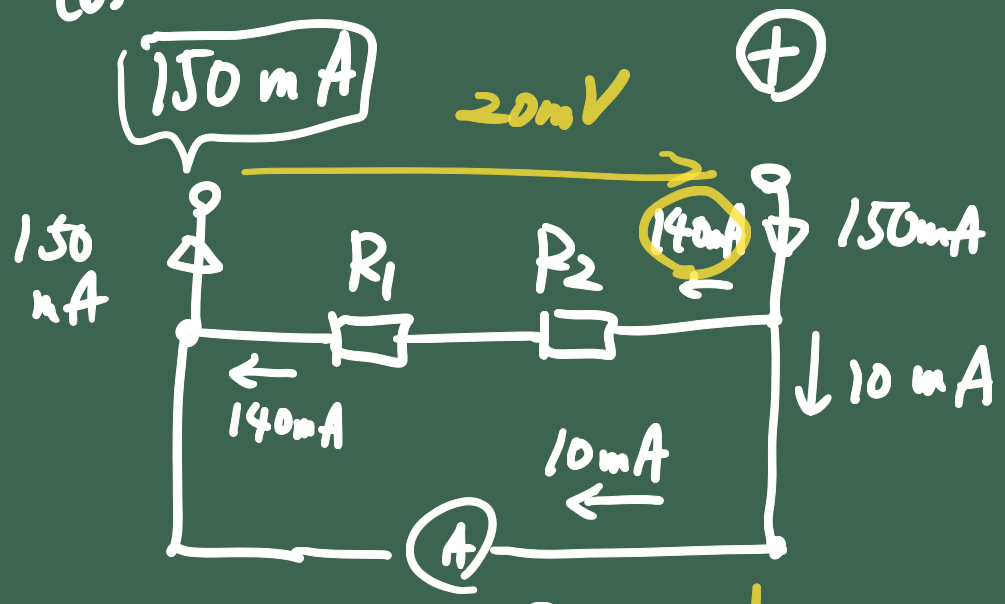
$R_x + 3 = 4 \rightarrow R_x = 1\ [k\Omega]$

合成抵抗 $\frac{6 \cdot 9}{6+9} = \frac{6 \cdot 9}{15}\ k\Omega$ $\frac{15}{9} = \frac{5}{3}$

$I = \frac{6\ V}{(6 \cdot 9/15)\ k\Omega} = 1.66\cdots\ mA$

H19 問16

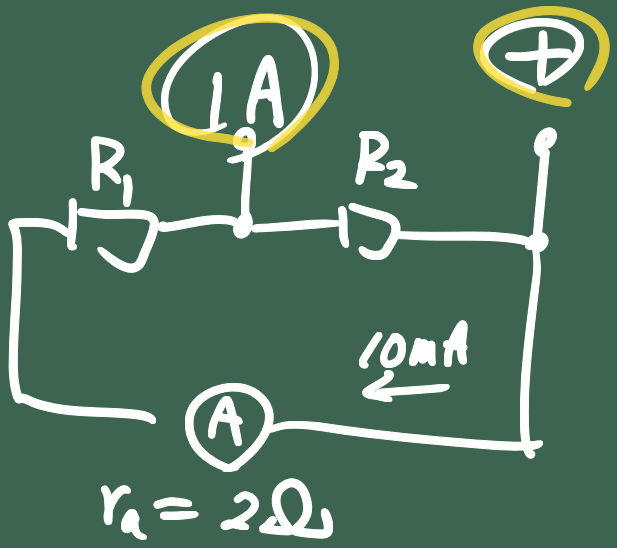
(6)

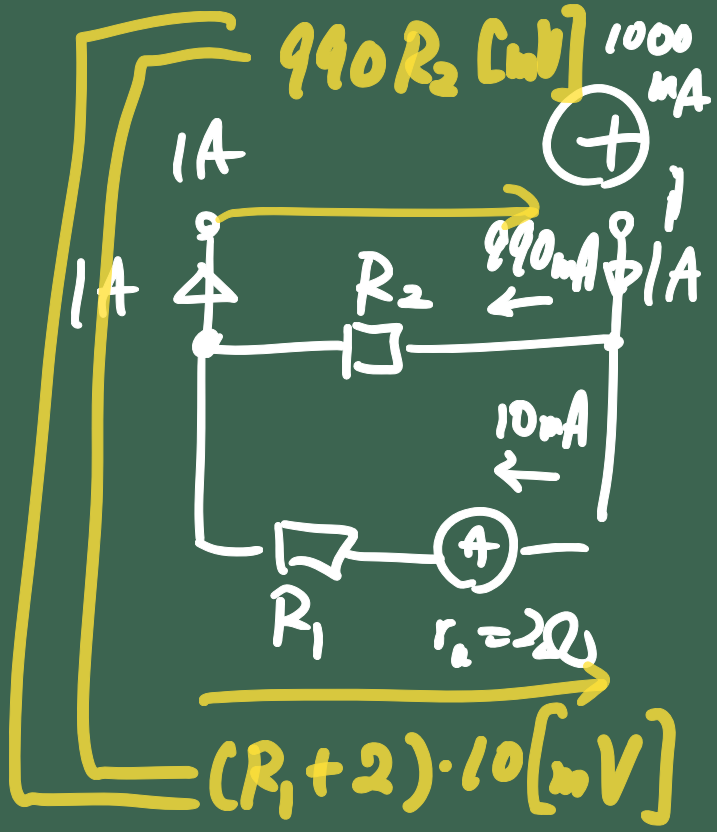


$2\Omega \cdot 10\text{mA} = 20\text{ mV}$

$R_1 + R_2 = \frac{20\text{mV}}{140\text{mA}}$

$R_1 + R_2 = \frac{1}{7}$





$10(R_1+2) = 990R_2$

$R_1 + 2 = 99R_2$

$$R_1 + R_2 = \frac{1}{7}$$

$$R_1 - 99R_2 = -2 \quad (-$$

$$100R_2 = \frac{1}{7} - (-2) = \frac{1+14}{7} = \frac{15}{7}$$

$$R_2 = \frac{15}{7 \times 100} \fallingdotseq 0.0219 \ [\Omega]$$

$$R_1 = \frac{1}{7} - R_2 = 0.121 \ [\Omega]$$