

第9次作业

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1.

(a) 开关断开时

$$U_A = -9 + 3 = -6V$$

开关闭合时

$$U_A = 3 + \frac{-9}{6+3} \times 6 = -3V$$

(b) 开关断开

$$U_A = 6V$$

开关闭合

$$U_A = \frac{6}{5+1} \times 5 = 5V$$

2. 根据基尔霍夫定律

$$-15 + I(4+2+3+1) + 5 = 0$$

$$\Rightarrow I = 1A$$

$$U_a = -15 + 1(4+2) - 1 = -10V$$

$$U_b = 1 \times 2 - 1 = 1V$$

3. 由题知 $i' = \frac{10}{5} = 2A$

$$\text{又 } i = 0.9i_1 \Rightarrow i_1 = \frac{20}{9}A$$

$$U_{ab} = (i_1 - i) \times 4 = \frac{8}{9}A$$