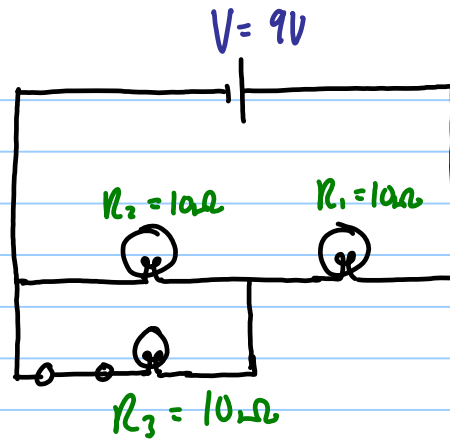
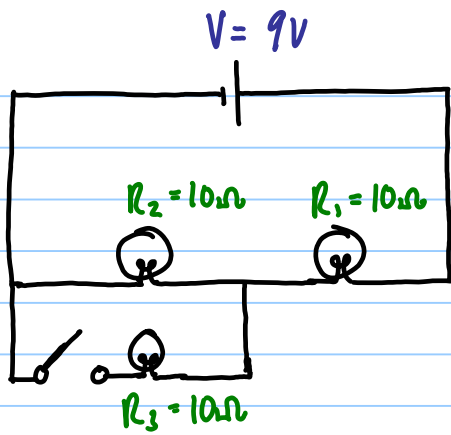


- What is the total current when the switch is open?
- What is the total current when the switch is closed?
- What is the current through R_2 when the switch is closed?
- What happens to lightbulb R_1 when the switch is closed?
- What happens to lightbulb R_2 when the switch is closed?



a) $R_T = R_1 + R_2 = 20\Omega$

$$I_T = \frac{V_T}{R_T} = \frac{9V}{20\Omega} = 0.45 A \checkmark$$

b) $R_p = (R_2^{-1} + R_3^{-1})^{-1} = 5\Omega$

$$R_T = R_p + R_1 = 15\Omega$$

$$I_T = \frac{V_T}{R_T} = \frac{9V}{15\Omega} = 0.60 A \checkmark$$

c) Since $R_2 = R_3$, $I_2 = I_3 = \frac{I_T}{2} = 0.30 A \checkmark$

d) brighter \checkmark

e) dimmer \checkmark