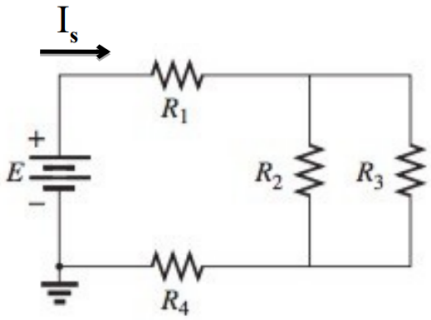
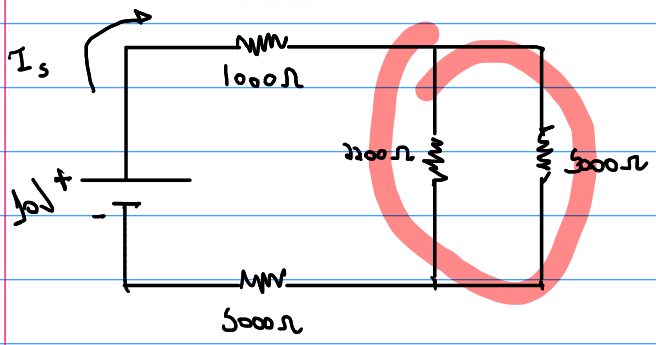
- **Exercício 1:** Supondo E=10V, R_1=1kΩ, R_2=2,2 kΩ, R_3=R_4=5kΩ, determine R_T e I_s.

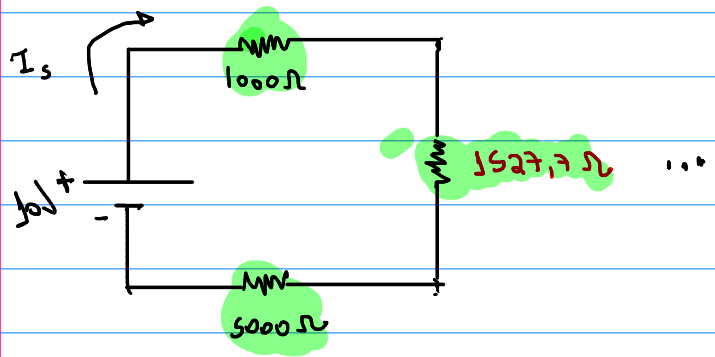


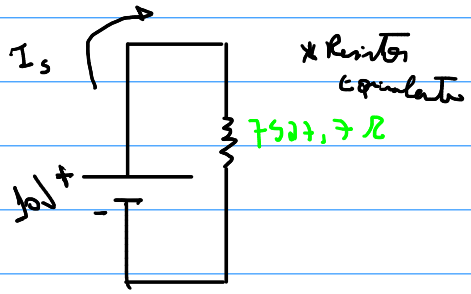
$$R_T = R_1 + R_2 + R_3 + R_4 + \ldots + R_N$$

$$R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \ldots + \frac{1}{R_N}}$$



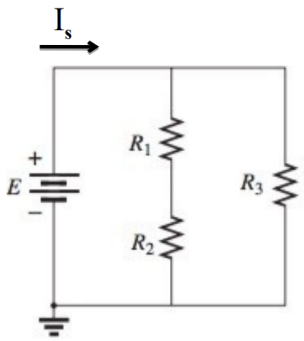
$$R_{eq} = \frac{1}{\frac{1}{2200} + \frac{1}{5000}} = 1527{,}7\ \Omega$$





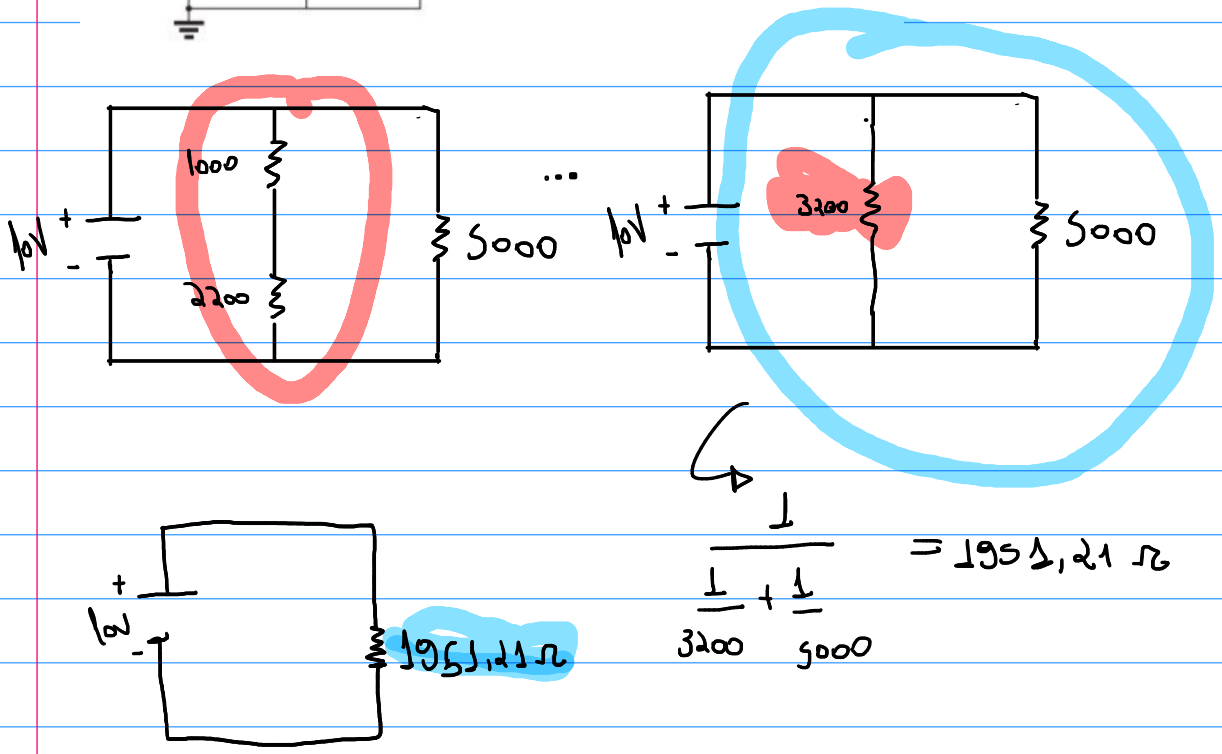
$$I_s = \frac{E}{R_{eq}} = \frac{10}{1527{,}7} = 0{,}00132843\ A$$

- **Exercício 2:** Supondo E=10V, R_1=1kΩ, R_2=2,2 kΩ, R_3=5kΩ, encontre R_T e I_s.



$$R_T = R_1 + R_2 + R_3 + R_4 + \ldots + R_N$$

$$R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \ldots + \frac{1}{R_N}}$$

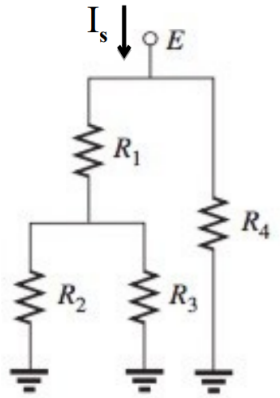


$$\frac{1}{\frac{1}{3200} + \frac{1}{5000}} = 1951{,}21\ \Omega$$

$R_t = 1951{,}21\ \Omega$

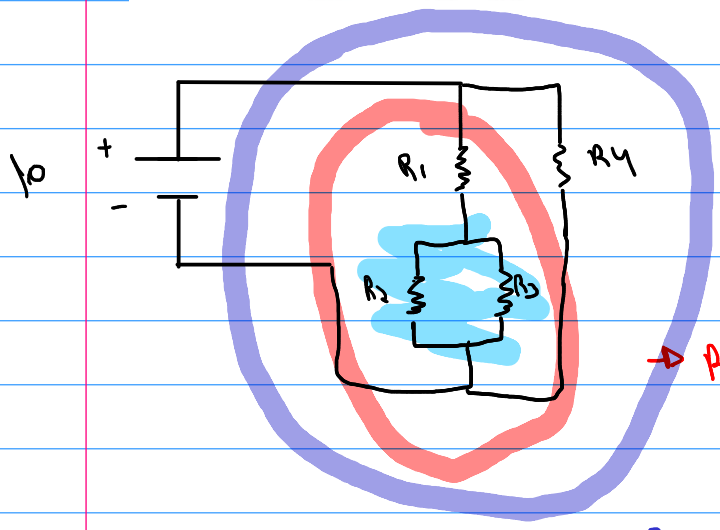
$$I_s = \frac{E}{R_t} = \frac{10}{1951{,}21} = 0{,}005122\ A \text{ ou } 5{,}12\ mA$$

- **Exercício 3:** Supondo E=10V, R_1=1kΩ, R_2=2,2 kΩ, R_3=R_4=5kΩ, encontre R_T e I_s.



$$R_T = R_1 + R_2 + R_3 + R_4 + \ldots + R_N$$

$$R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \ldots + \frac{1}{R_N}}$$



$$Req = \frac{1}{\frac{1}{R_2} + \frac{1}{R_3}} = \frac{1}{\frac{1}{2200} + \frac{1}{5000}} = 1527,7\,\Omega$$

$$Req = R_1 + 1527,7 = 2527,7\,\Omega$$
$R_1 = 1000$

$$R_T = \frac{1}{\frac{1}{2527,7} + \frac{1}{5000}} = 1678,93\,\Omega$$

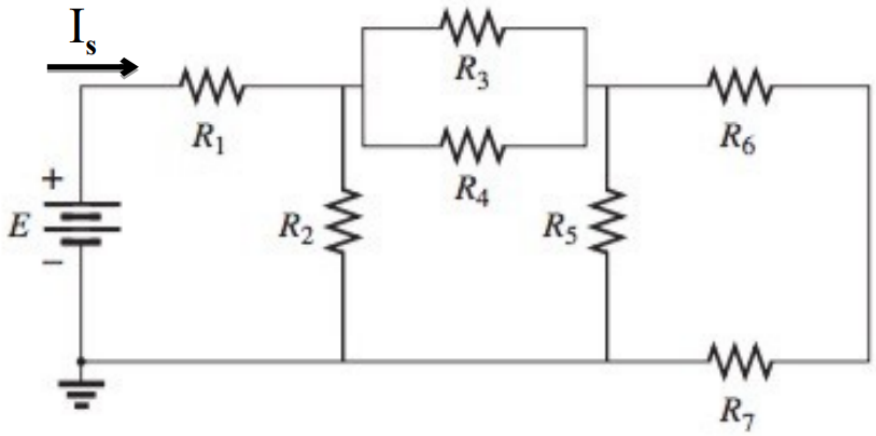
$R_T = 1678,93\,\Omega$

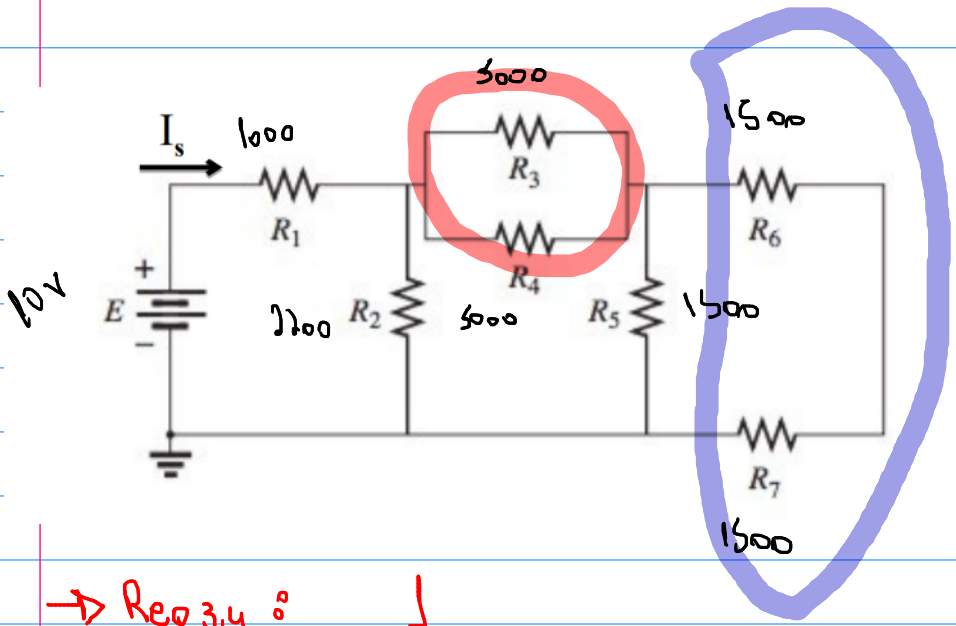
$$I_s = \frac{E}{R_T} = \frac{10}{1678,93} = 0,005956\,A \text{ ou } 5,956\,mA$$

Exercício 4: Supondo E=10V, R_1=1kΩ, R_2=2,2 kΩ, R_3=R_4=5kΩ, R_5=R_6=R_7=1,5 kΩ, encontre R_T e I_s:

$$R_T = R_1 + R_2 + R_3 + R_4 + \ldots + R_N$$

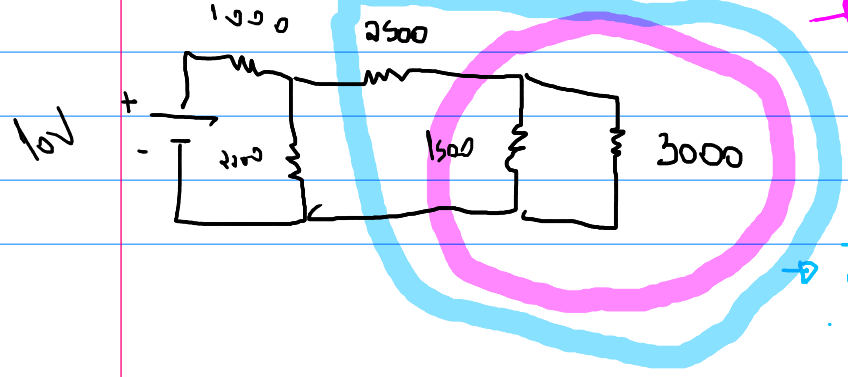
$$R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \ldots + \frac{1}{R_N}}$$





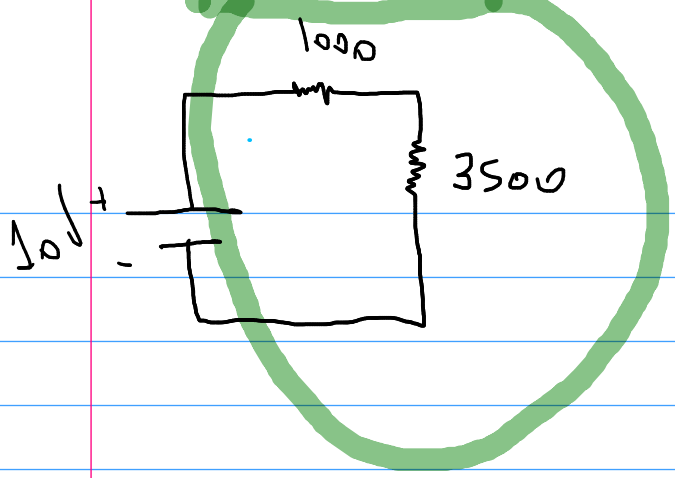
→ $Req_{3,4}$: $\frac{1}{\frac{1}{5000} + \frac{1}{5000}} = 2500\ \Omega$

→ $Req_{6,7}$: $R_6 + R_7 = 3000$



→ $\frac{1}{\frac{1}{1500} + \frac{1}{3000}} = 1000\ \Omega$

→ $2500 + 1000 = 3500\ \Omega$



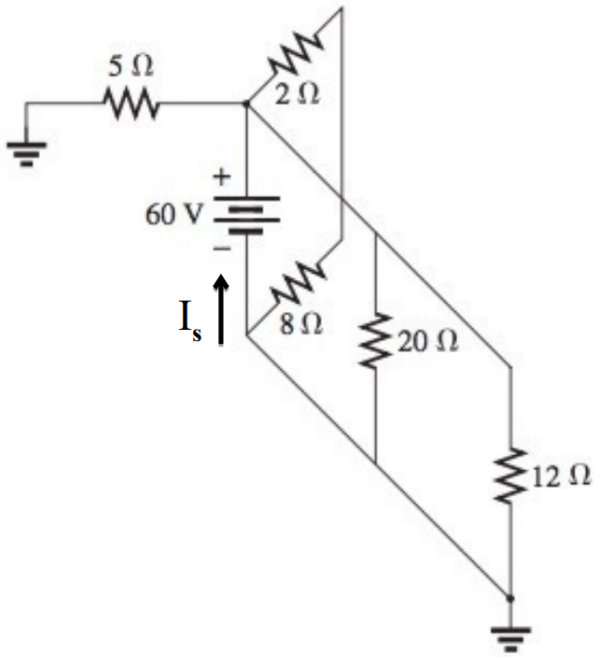
→ 3500 + 1000 = 4500 Ω

$R_t = 4500\ \Omega$

$I_s = \frac{E}{R_t} = \frac{10}{4500} \approx 0{,}002$ A ou 2 mA

- **Exercício 5:**

Para o circuito determine a resistência equivalente e I_s:



60 V + −

5 Ω

2 Ω

20 Ω

12 Ω

8 Ω

$\frac{1}{\frac{1}{10} + \frac{1}{20} + \frac{1}{12}} = 4,28$

$8 + 2 = 10\ \Omega$

$\frac{1}{\frac{1}{5} + \frac{1}{4,28}} = 2,30\ \Omega$

$R_T = 2,30\ \Omega$

$I_s = \frac{E}{R_T} = \frac{60}{2,30} = 26,08\ A$