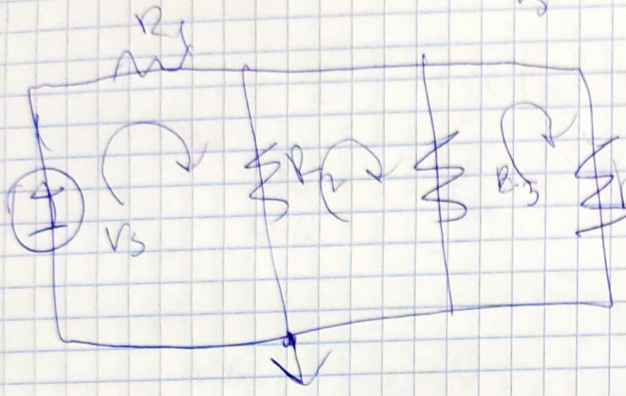
Pre lab

$R_1 = 100\,\Omega$ $R_2 = 100\,\Omega$ $R_3 = 200\,\Omega$

$V_s = 15$ $R_4 = 300\,\Omega$



$100I_1 + 100I_1 - 100I_2 - 15 = 0$

$100I_2 - 100I_1 + 200I_2 - 200I_3 = 0$

$200I_3 - 200I_2 + 300I_3 = 0$

$200I_1 - 100I_2 = 15$

$40I_1 - 20I_2 = 3$

$3I_2 - I_1 - 2I_3 = 0$

$5I_3 = 2I_2$

$I_1 = 3,5I_3$

$+3I_3$

$280I_3 - 50I_3 = 3$

$230I_3 = 3$

$I_3 = \frac{3}{230}$

$I_2 = \frac{15}{230}$

$I_1 = \frac{21}{230}$

$V_{R4} = 300 \cdot \frac{3}{230} \angle 90° = \frac{90}{23} \angle 90°$

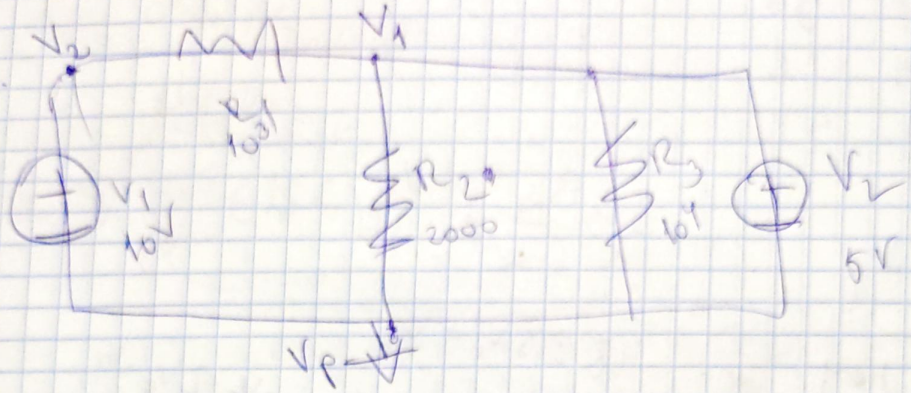
$V_{R3} = 200 \angle \left(-\frac{45}{230}\right) = \frac{90}{23} \angle -135$

$V_{R2} = 100 \angle \left(-\frac{135}{230}\right) = \frac{135}{230}$

$V_{R1} = 100 \cdot \frac{21}{230} = \frac{210}{230}$

Pretlab

2.



$$\frac{V_2 - V_1}{10^3} = \frac{5}{2000} + \frac{5}{\infty}$$

$$V_1 - V_p = 5V$$

$$V_p = 0$$

$$V_1 = 5V$$

$$I_{R_2} \quad \frac{V_1}{2000} = \frac{5}{2000} = \frac{1}{400} A$$

$$I_{R_3} \quad \frac{V_1}{10^4} = \frac{5}{10000} = \frac{1}{2000} A$$

$$-V_1 + I \cdot 10^3 = -5$$

$$I \cdot 10^3 = 5$$

$$I = \frac{5}{10^3} = \frac{1}{200} A$$