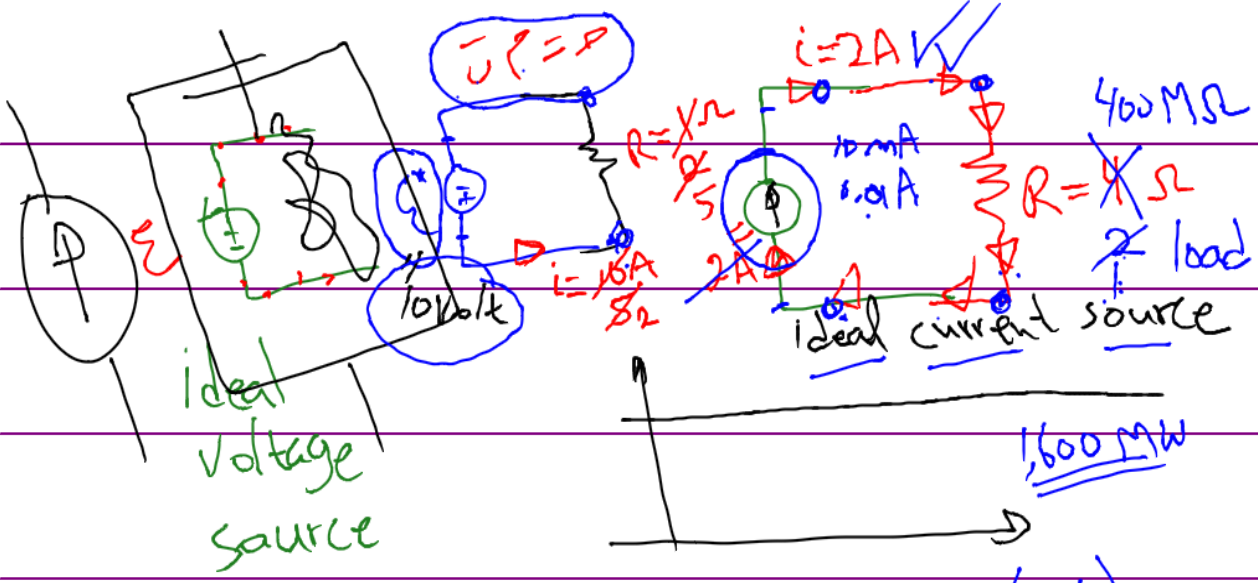
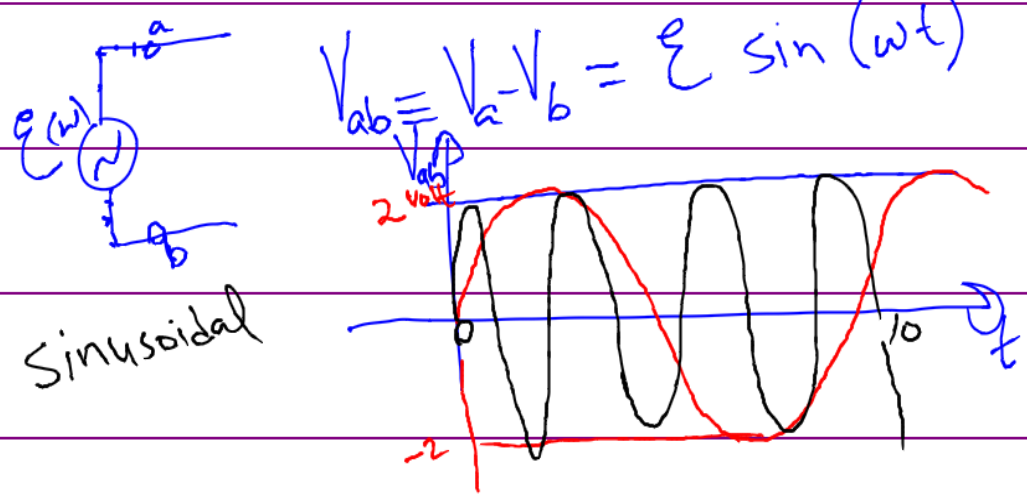
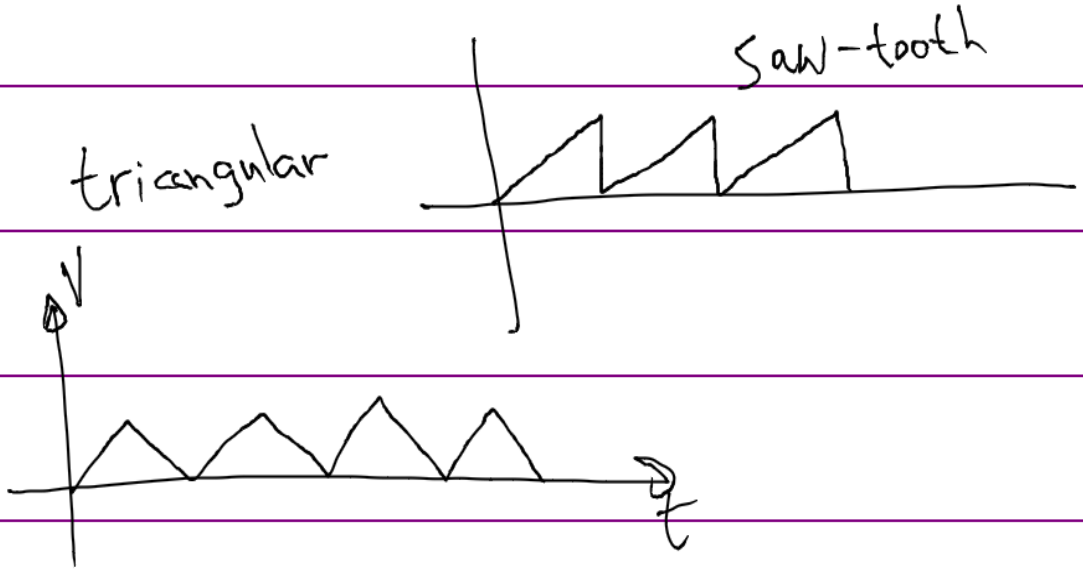
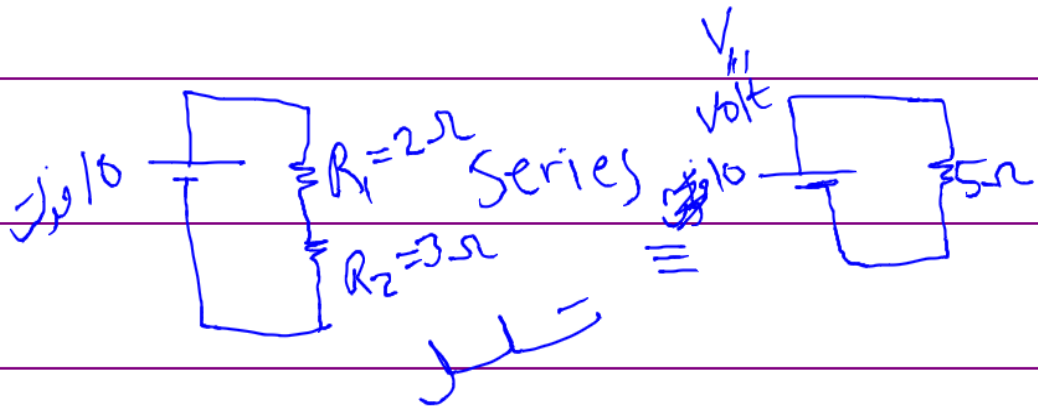
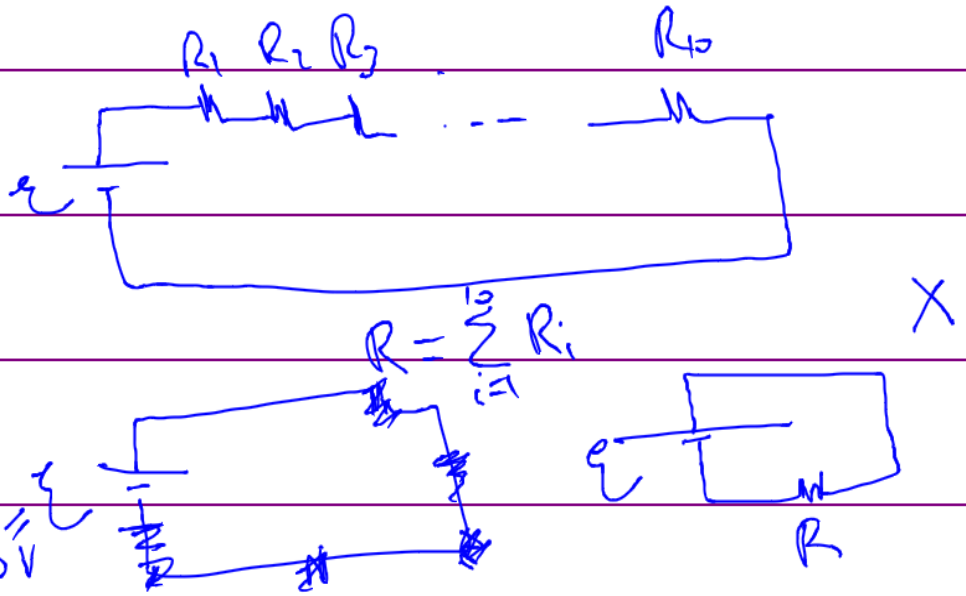




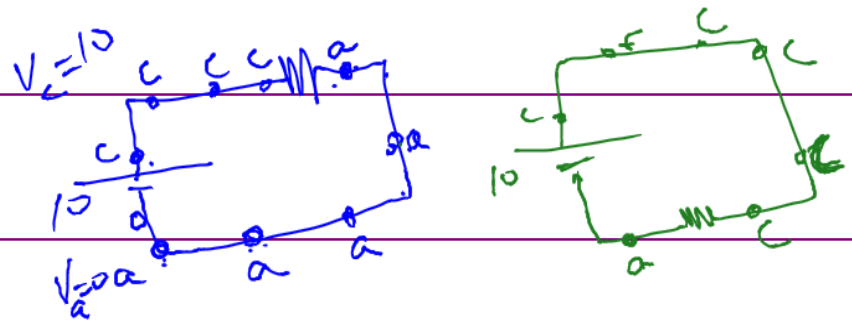
$V_{ab} = V_a - V_b = \mathcal{E} \sin(\omega t)$







X

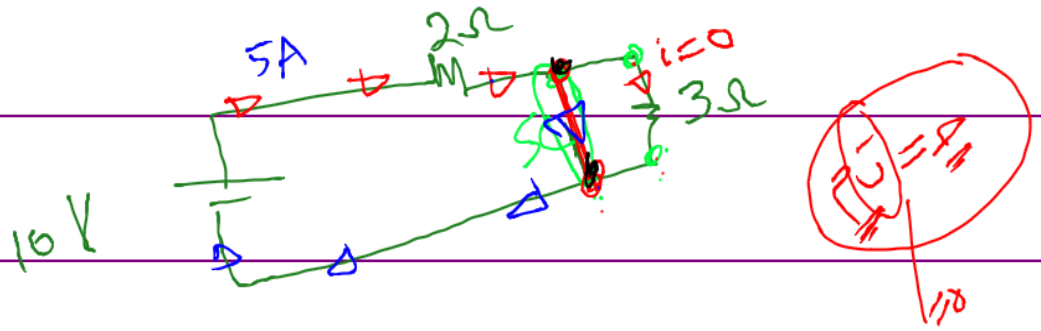


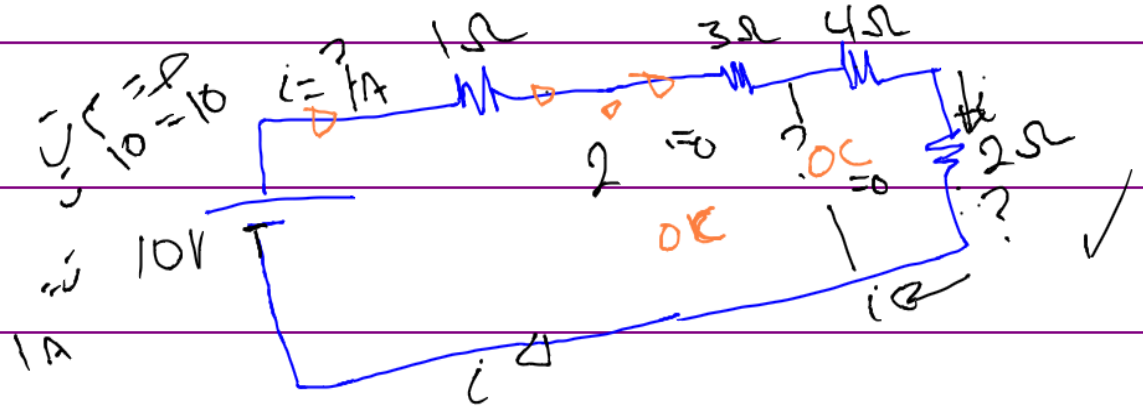
SC

Short circuit $\equiv R = 0 \equiv$ 0volt

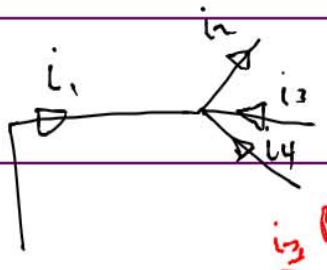
OC

open circuit $\equiv R \to \infty \equiv$ 0A





KCL



$i_1 + i_3 + i_4 - i_2 = 0$ ✓

$i_2 - i_1 - i_3 - i_4 = 0$ ✓

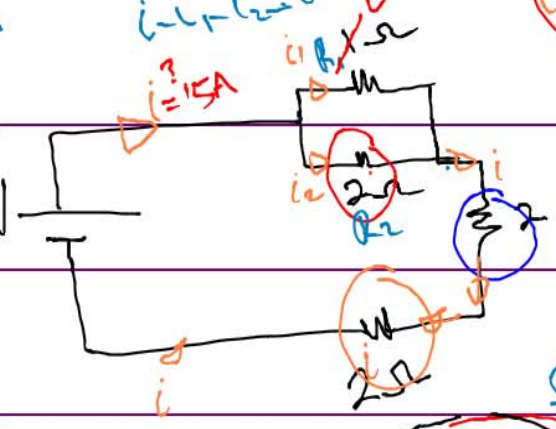
$i_3 R_3$

$i = i_1 + i_2$

$i - i_1 - i_2 = 0$

$i_1 + i_2 - i = 0$

$i = i_1 + i_2$



$i_1 = \frac{1}{1.5} i$

$i_2 = \frac{0.5}{1.5} i$

$i_1 = 10A$

$i_2 = 5A$

$i_1 = \frac{G_1}{G_1 + G_2 + G_3} i$

$i_2 = \frac{G_2}{G_1 + G_2 + G_3} i$

$i_3 = \frac{G_3}{G_1 + G_2 + G_3} i$

$= \left(\frac{R_2}{R_1 + R_2}\right) i$

$= \left(\frac{R_1}{R_1 + R_2}\right) i$

$\Omega = ohm$

$\frac{1}{\Omega} = mho$

resistance

$G = \frac{1}{R\Omega}$

Conductance

$G_1 = \frac{1}{1} = 1\ mho$

$= 1\Omega$

$G_2 = \frac{1}{2} = 0.5\Omega$

$i_k = \left(\frac{G_k}{\sum G_i}\right) i$

✓

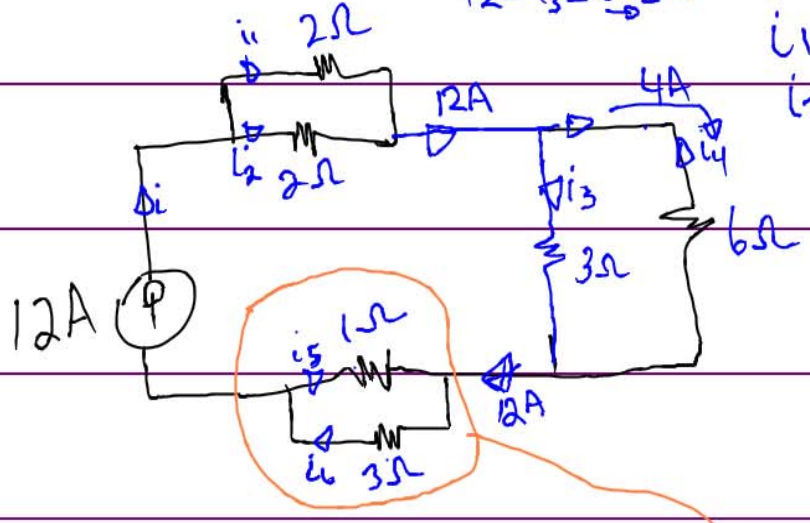
Ex. 1.4 pg 23

$12 - i_3 - i_5 = 0$

$i = 12\ A$

$i_1 = 6A$

$i_2 = 6A$



$i_3 = \left(\frac{6}{3+6}\right) 12$

$I_3 = 8\ A$

$i_4 = -4A$

$i_5 = \left(\frac{1}{1+3}\right) 12 = 3A$

$i_6 = \left(\frac{\quad}{1+3}\right)$

$i_5 = -9A$