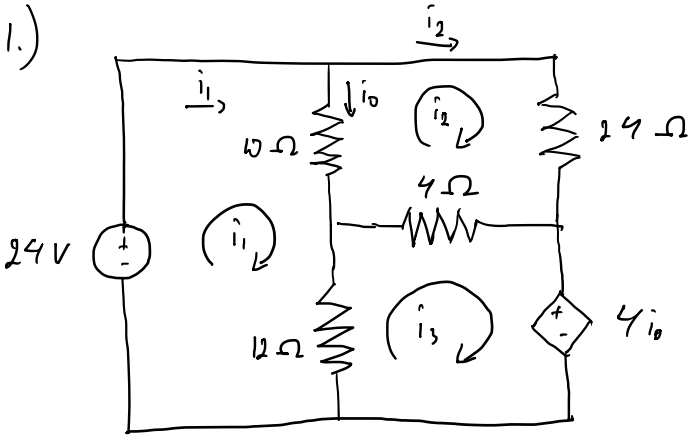
M. Hasyim Abdillah P.

1101191095 / TT-43-11

1.)



* Loop i_1 :

$-24 + 10(i_1 - i_2) + 12(i_1 - i_3) = 0$

$22 i_1 - 10 i_2 - 12 i_3 = 24$

$11 i_1 - 5 i_2 - 6 i_3 = 12$

* $i_0 = i_1 - i_2$

* Loop i_2 :

$24 i_2 + 4(i_2 - i_3) + 10(i_2 - i_1) = 0$

$-10 i_1 + 38 i_2 - 4 i_3 = 0$

$-5 i_1 + 19 i_2 - 2 i_3 = 0$

* Loop i_3 :

$12(i_3 - i_1) + 4(i_3 - i_2) + 4(i_1 - i_2) = 0$

$3(i_3 - i_1) + (i_3 - i_2) + (i_1 - i_2) = 0$

$-2 i_1 - 2 i_2 + 4 i_3 = 0$

$-i_1 - i_2 + 2 i_3 = 0$

$2 i_3 = i_1 + i_2$

* $-5 i_1 + 19 i_2 - 2 i_3 = 0$

$-5 i_1 + 19 i_2 - (i_1 + i_2) = 0$

$-6 i_1 + 18 i_2 = 0$

$i_1 = 3 i_2$

* $11 i_1 - 5 i_2 - 6 i_3 = 12$

$11(3 i_2) - 5 i_2 - 6(2 i_2) = 12$

$16 i_2 = 12$

$i_2 = 0,75 \text{ A}$

$i_1 = 2,25 \text{ A}$

* $2 i_3 = i_1 + i_2$

$2 i_3 = 4 i_2$

$i_3 = 2 i_2$

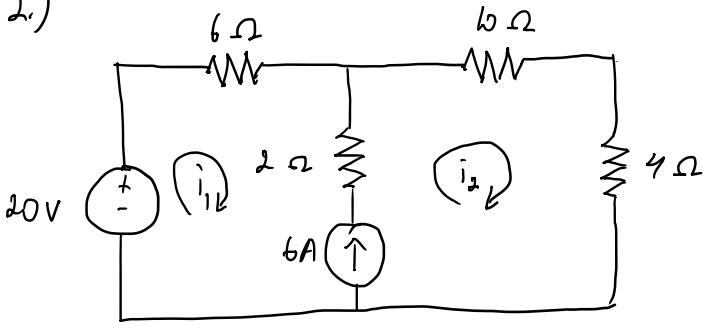
$i_3 = 1,50 \text{ A}$

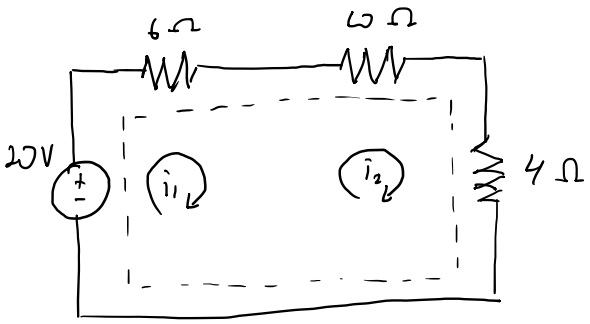
$\therefore i_0 = i_1 - i_2$

$i_0 = 2,25 - 0,75$

$i_0 = 1,50 \text{ A}$

2.)





(Super - Mesh)

* $i_2 - i_1 = 6\ A$

$i_2 = i_1 + 6$

* Loop supermesh :

$-20 + 6i_1 + 10i_2 + 4i_2 = 0$

$6i_1 + 14(i_1 + 6) = 20$

$20i_1 + 84 = 20$

$20i_1 = -64$

$i_1 = -3{,}2\ A$

$i_2 = -3{,}2 + 6$

$i_2 = 2{,}8\ A$