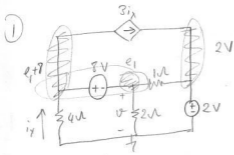


EE 209
Midterm #1
Solutions



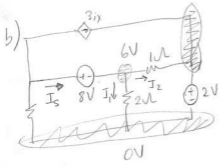
a) KCL at Supernode = $\frac{e_1+8}{4} + 3i_x + \frac{e_1-2}{1} + \frac{e_1}{2} = 0$

$\left(\frac{0 - (e_1+8)}{4} \right)$

$e_1 \left(\frac{1}{4} - \frac{3}{4} + 1 + \frac{1}{2} \right) = -2 + 6 + 2$

$e_1 = 6V$

$V = e_1 = 6V$

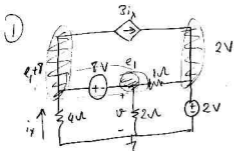


$I_s = I_1 + I_2$
 $= \frac{6-0}{2} + \frac{6-2}{1} = 7A$

$P = 8 \cdot I_s = 56 \text{ Watts}$

Absorbed.

EF 209
 Midterm #1
 Solutions



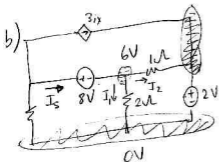
a) KCL at Supernode : $\frac{e_1 + 8}{4} + 3i_x + \frac{e_1 - 2}{1} + \frac{e_1}{2} = 0$

$\left(\frac{0 - (e_1 + 8)}{4} \right)$

$e_1 \left(\frac{1}{4} - \frac{3}{4} + 1 + \frac{1}{2} \right) = -2 + 6 + 2$

$e_1 = 6V$

$U = e_1 = 6V$



$I_s = I_1 + I_2$
 $= \frac{6-0}{2} + \frac{6-2}{1} = 7A$

$P = 8 \cdot I_s = 56 \text{ Watts}$

Absorbed.