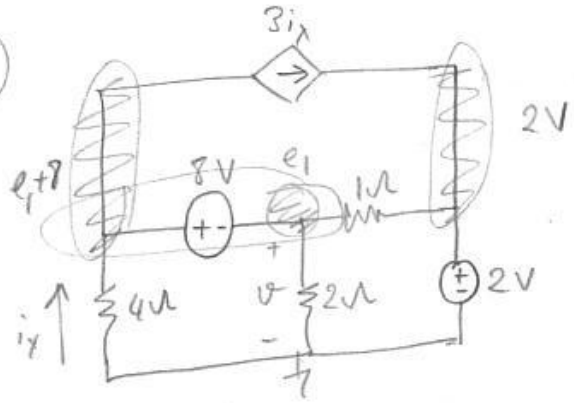
18.10.2004
G.C.

EE 209
Midterm #1
Solutions

1)



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

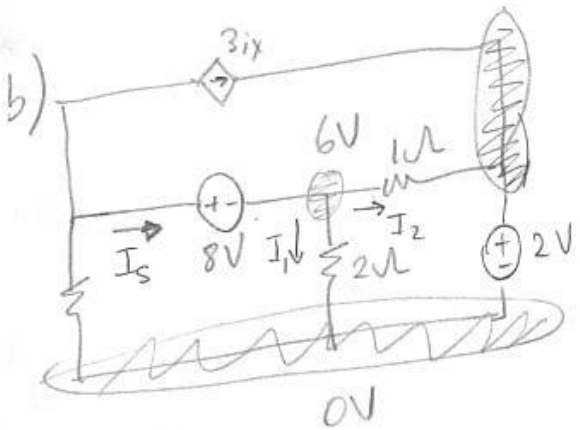
$i_x = \frac{0-(e_1+8)}{4}$

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

$e_1 = 6\ V$ *

$v = e_1 = 6V$

b)



$I_s = I_1 + I_2$

$= \frac{6-0}{2} + \frac{6-2}{1} = 7A.$

$P = 8 \cdot I_s = 56$ Watts.

Absorbed.