23S-EC ENGR-3-LEC-1 Homework 7

SANJIT SARDA

TOTAL POINTS

100 / 100

QUESTION 1

1 Q1 (Power Calculation) 80 / 80

✓ **- 0 pts** *Correct*

- 5 pts Numerical error

- 15 pts Incorrect Approach

- 80 pts Blank

- 0 pts Click here to replace this description.

QUESTION 2

2 Q2 (Absorbing or Delivering) 20 / 20

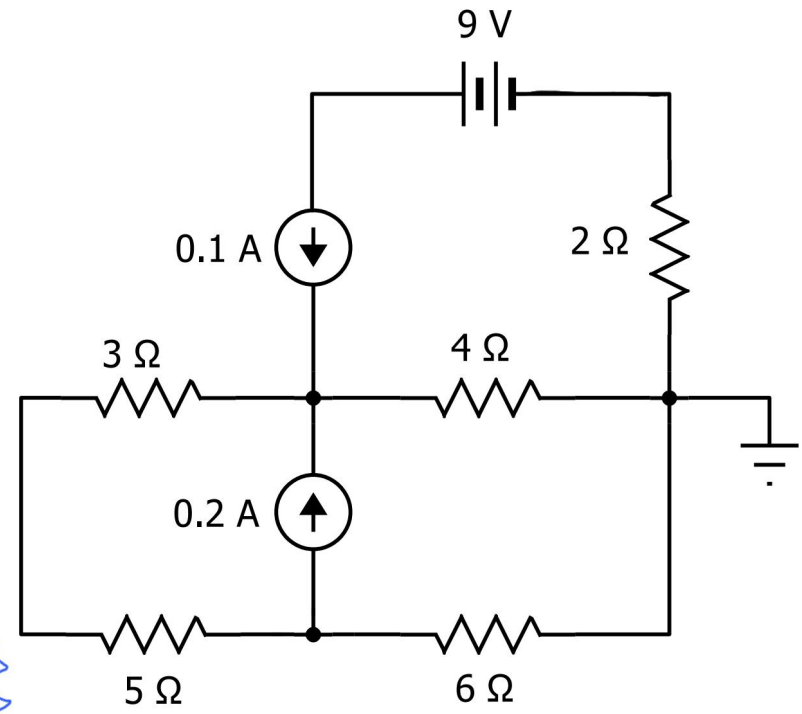
✓ **- 0 pts** *Correct*

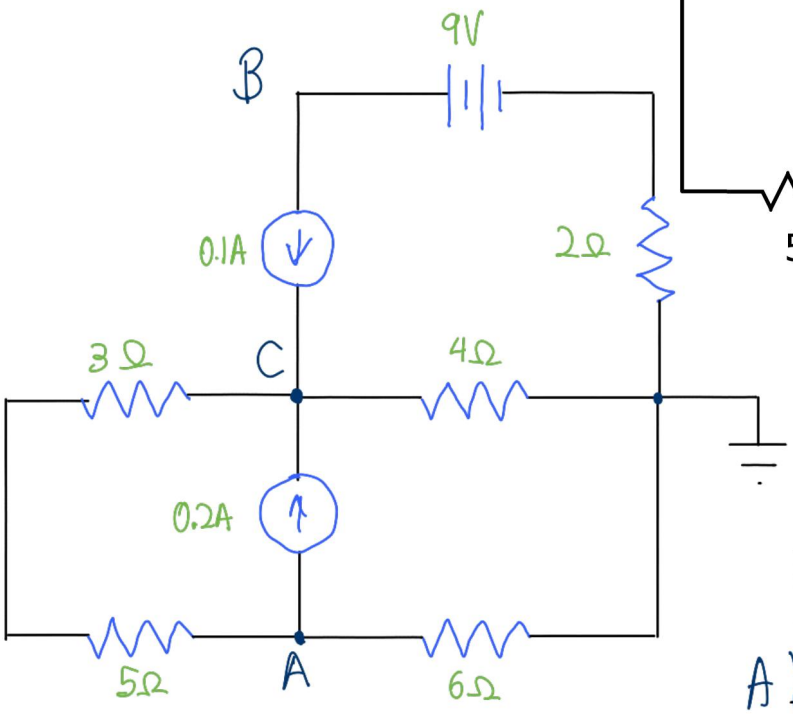
- 10 pts Incorrect but reasonable attempt/explanation

- 20 pts Blank/Missing

EE3 Spring 2023
Homework Problem 6

Find the power provided or absorbed by the 0.1 A current source. Is it providing or absorbing?





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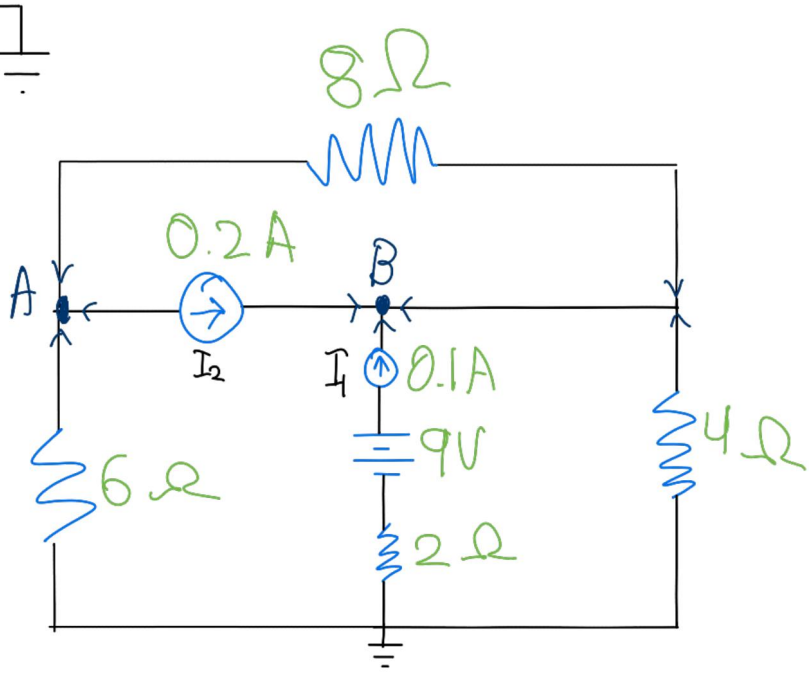

@A: $\frac{-V_A}{6} - 0.2 + \frac{V_B - V_A}{8} = 0$

@B: $0.2 + \frac{V_A - V_B}{8} - \frac{V_B}{4} + 0.1 = 0$

Solving $V_A = -\frac{2}{5}$ V, $V_B = \frac{2}{3}$ V

$I_1 = 0.1$A, $V_{I_1} = V_B - 9\text{V} + (0.1)(2) = 8.133$V

$\therefore$ Power $= VI = 0.1 \cdot 8.133 = -0.8133$W

Since power is negative, power is being absorbed.

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EE3 Spring 2023
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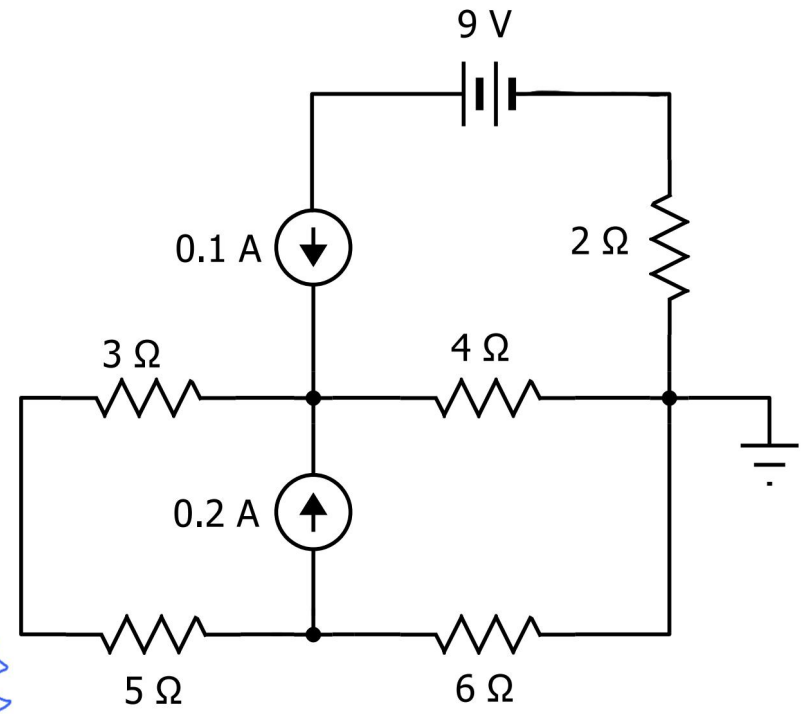

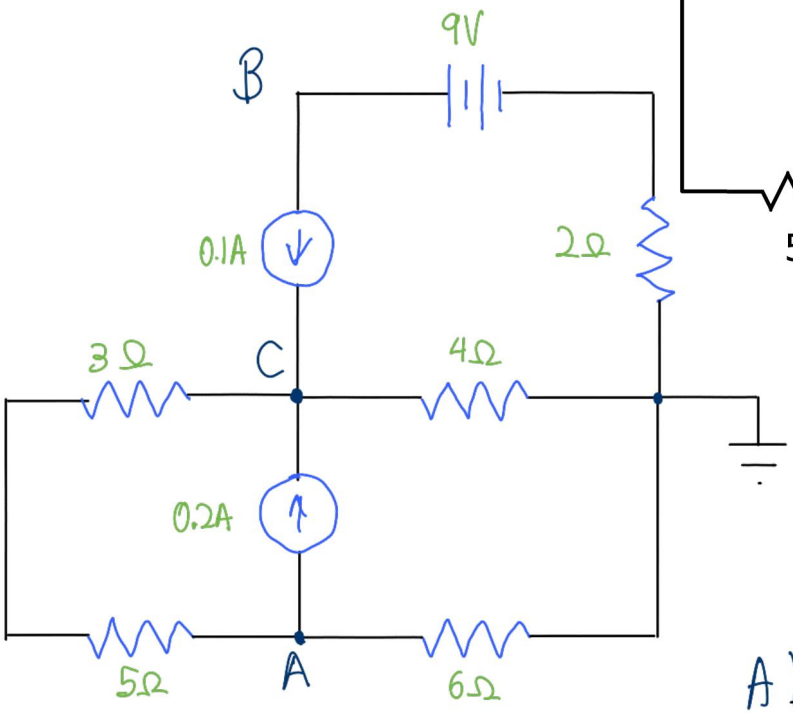

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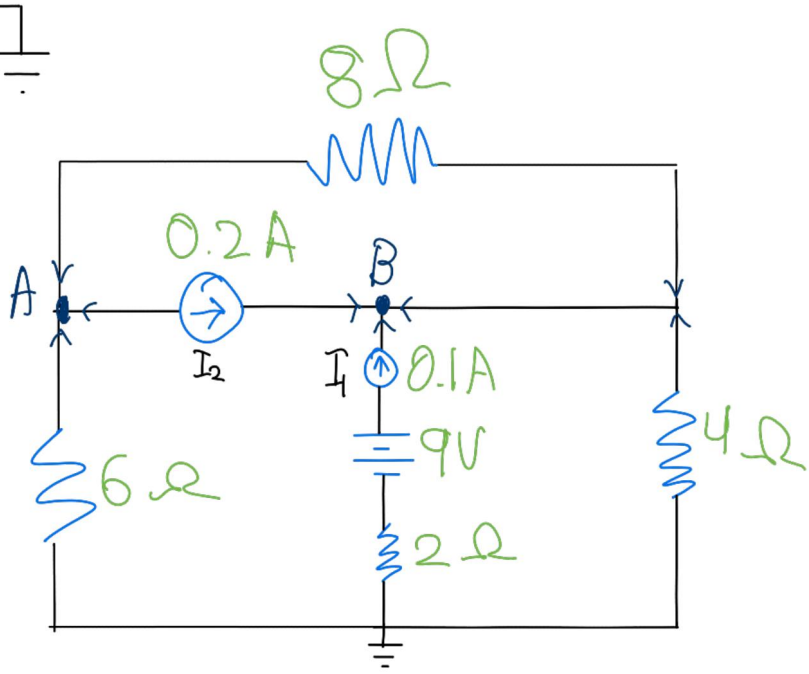

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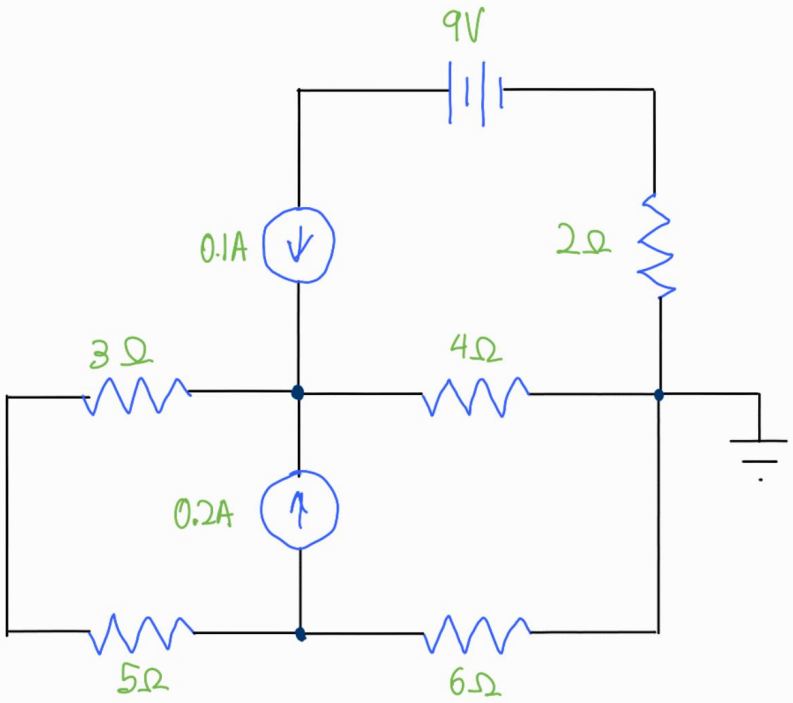
9V
0.1A
2Ω
3Ω
4Ω
0.2A
5Ω
6Ω