

SAMPLE SOLUTION WRITEUPS FOR ECE 207

WINTER 2000

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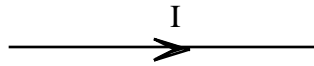
Your solutions to the problems in the investigations need to make clear

1. What each problem is with an underlined "headline" like those in the examples below
2. What is given
3. How you're solving the problem
4. What your answer is

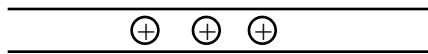
EXAMPLE SOLUTION WRITEUPS FOR INVESTIGATION 1

1. Relationship between the flow of epc in a wire and the corresponding current's sign and reference direction

- a. Flow of epc in this wire



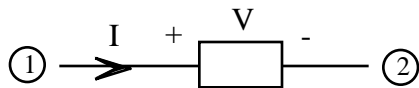
- (i) When $I = 3 \text{ ma}$



- (ii) When $I = -3 \text{ ma}$

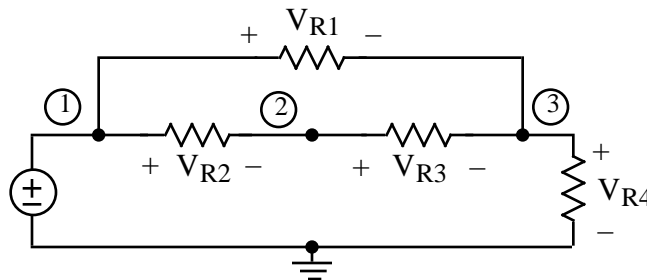


6. Finding the Voltage Across N



SAMPLE SOLUTION WRITEUPS FOR INVESTIGATION 2

5. Voltage drops in the following circuit



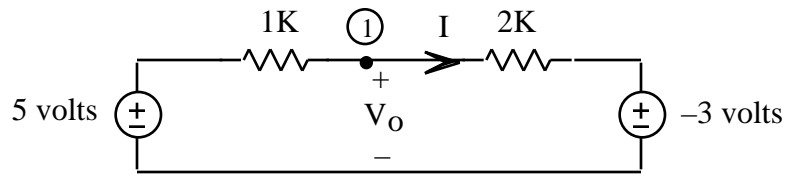
$$V_1 = 5 \text{ volts}$$

$$V_2 = 4 \text{ volts}$$

$$V_3 = 2 \text{ volts}$$

$$V_{R2} = V_1 - V_2 = \dots$$

7. Node Analysis of the following circuit



Node Equations -

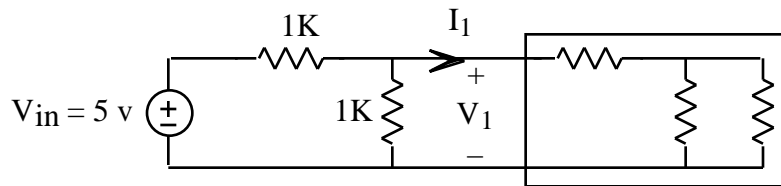
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SAMPLE SOLUTION WRITEUPS FOR INVESTIGATION 3

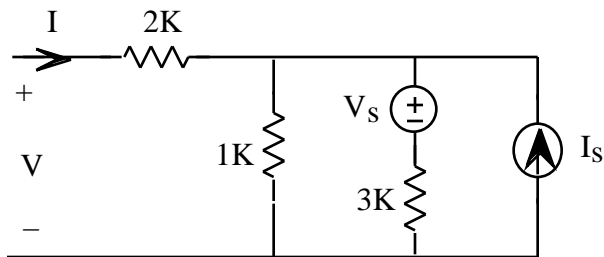
1. Equation Resistances

a. Equivalent resistance of a resistor circuit with $V = 1500I$

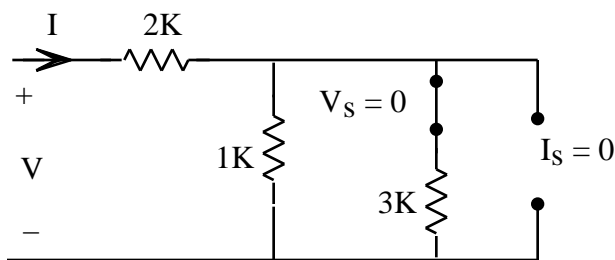
b. Using $V_1 = 2000I_1$ to redraw the following circuit with the boxed resistors replaced by their equivalent resistance



5. R_{eq} of the following circuit with all its sources set to zero



With all the sources set to zero we have



and so $R_{eq} =$