| Title | 4th homework in the Electric Circuit Theory class by 201923250 |
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# Summarization chapters from 2.5 to 2.8

The equal resistance to any number of connected resistors in series corresponds to the value of each resistance. Two parallel resistors are similar to their product resistors, separated by their value.

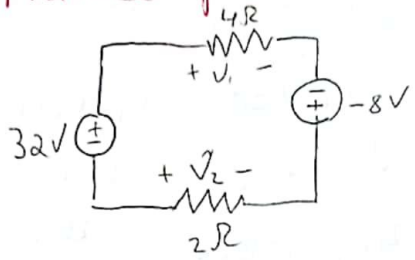
The equivalent action of the conjoined resistors is the sum of their respective conductors. Each resistor in Y is the output of two resistors separated into three resistors in two adjacent branches.

Each network resistor is a sum of all possible Y resistance components, separated by the opposite Y resistor, taken two at a time.

Resistors are also used for models of electrical energy conversion systems in heat or other energy sources. These products include cable, electricity lights, heaters, fireplaces, stoves and lamps. We shall consider two real-life problems in this section that apply the principles introduced in this chapter: electric lighting systems and dc meter architecture.

## Practice Problem Solutions from chapters 2.5 to 2.8

## Practice problem 2.5




$V_1 = 4i$

$V_2 = -2i$

$-32 + V_1 - (-8) - V_2 = 0$

$-32 + 4i - (-8) - (-2i) = 0$

$6i = 24$

$i = 4\,A$

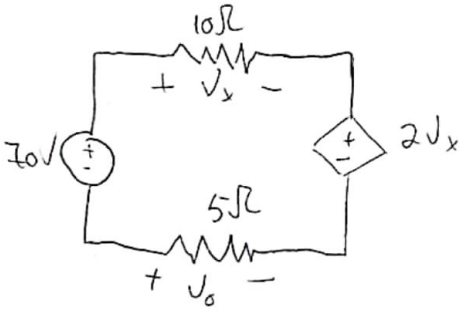
$V_1 = 4i = (4)(4)$

$= 16V$

$V_2 = -2i$

$= (-2)(4) = -8V$

## Practice problem 2.6




$V_x = 10i$

$V_o = -5i$

$-70 + V_x + 2V_x - V_o = 0$

$-70 + 10i + 20i - (-5i) = 0$

$35i = 70$

$i = 2\,A$

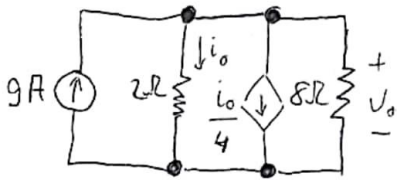
$V_x = 10i$

$= (10)(2) = 20V$

$V_o = -5i$

$= (-5)(2) = \underline{-10V}$

## Practice problem 2.7

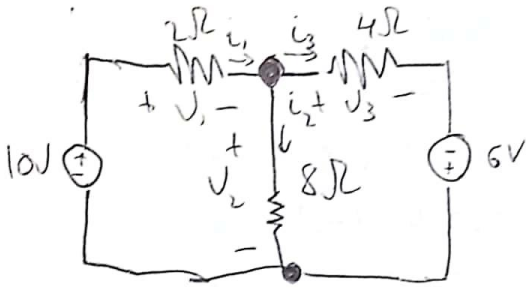



$9 = i_o + \frac{i_o}{4} + \frac{V_o}{8}$ $\quad 9 = i_o + \frac{i_o}{4} + \frac{i_o}{4}$

$6i_o = 36$ $\quad i_o = 6\,A$

$V_o = 2i_o = (2)(6) = \underline{12V}$

# Practice problem 2.8




$-6 - V_2 + V_3 = 0$

$V_3 = 6 + V_2$

$4i_3 = 6 + 8i_2$

$i_1 = i_2 + i_3$

$20 - 20i_2 = 6 + 8i_2$

$28i_2 = 14$

$i_2 = 0.5$ A

$i_1 = 5 - 4i_2 = 5 - (4)(0.5) = 3$ A

$V_2 = 8i_2 = 4$ V

$V_3 = 4i_3 = 10$ V