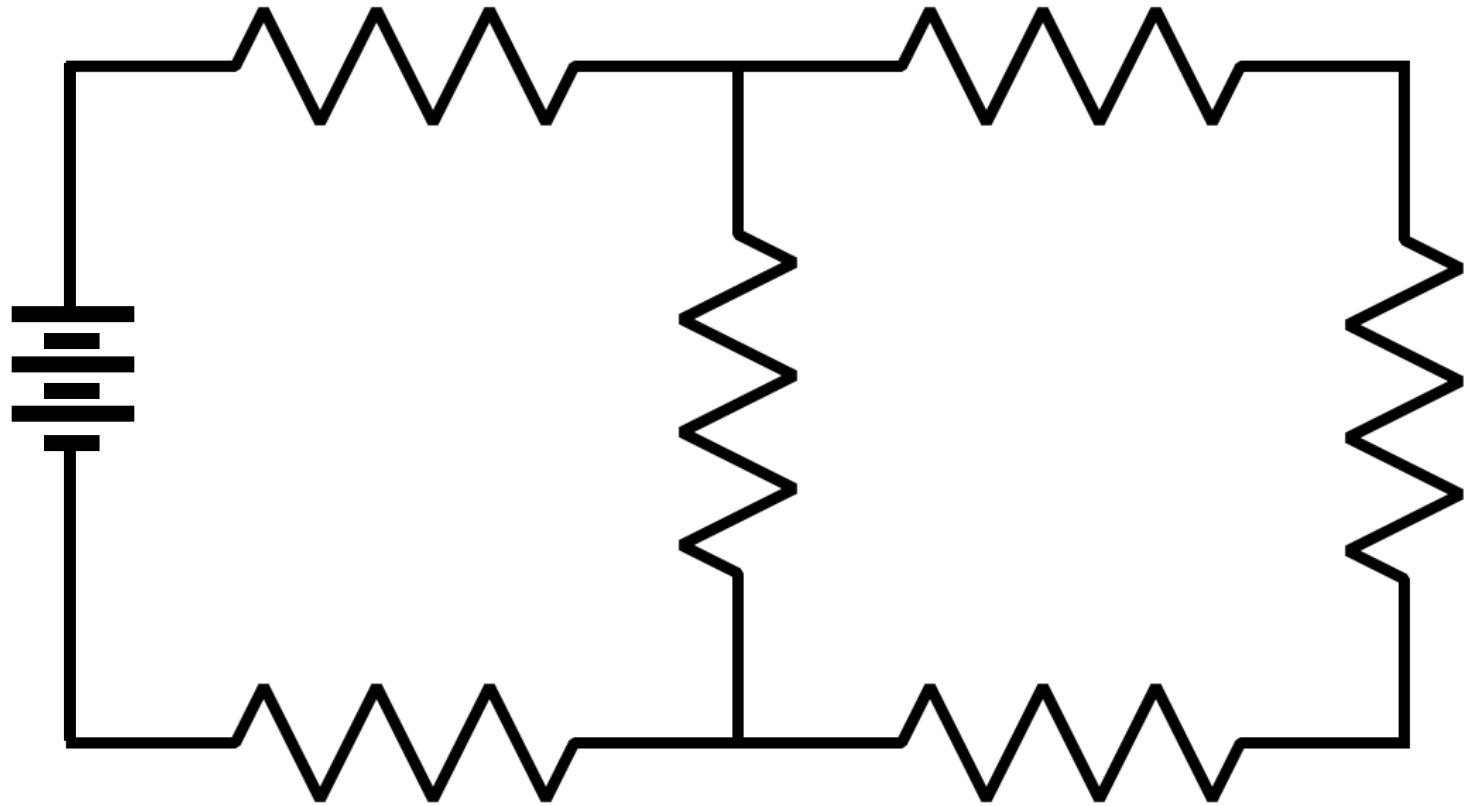
Series Parallel Math Example 3



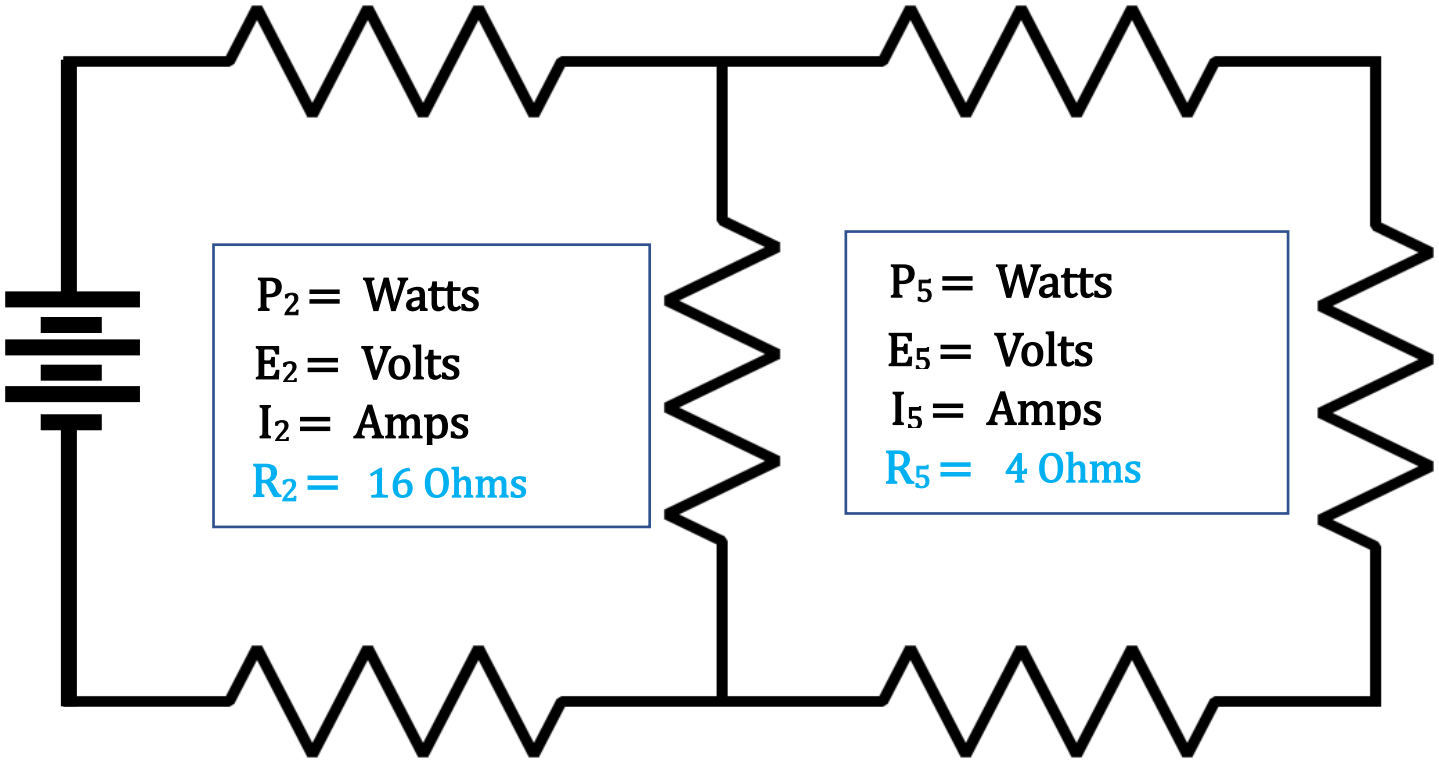
Math

Rule

$P_1 =$ Watts
$E_1 =$ Volts
$I_1 =$ Amps
$R_1 =$ 4 Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 =$ 2 Ohms

$P_T =$ Watts
$E_T =$ 24 Volts
$I_T =$ Amps
$R_T =$ Ohms



$P_2 =$ Watts
$E_2 =$ Volts
$I_2 =$ Amps
$R_2 =$ 16 Ohms

$P_5 =$ Watts
$E_5 =$ Volts
$I_5 =$ Amps
$R_5 =$ 4 Ohms

$P_3 =$ Watts
$E_3 =$ Volts
$I_3 =$ Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 =$ 18 Ohms

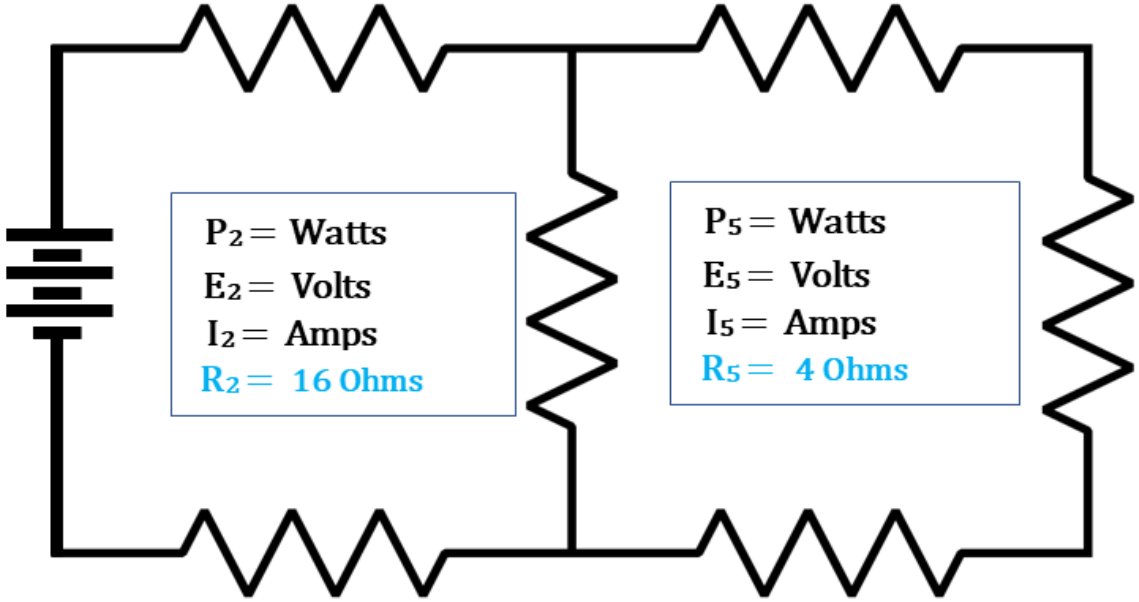
Math

Rule

P_1 = Watts
E_1 = Volts
I_1 = Amps
R_1 = 4 Ohms

P_4 = Watts
E_4 = Volts
I_4 = Amps
R_4 = 2 Ohms

P_T = Watts
E_T = 24 Volts
I_T = Amps
R_T = Ohms



P_2 = Watts
E_2 = Volts
I_2 = Amps
R_2 = 16 Ohms

P_5 = Watts
E_5 = Volts
I_5 = Amps
R_5 = 4 Ohms

P_3 = Watts
E_3 = Volts
I_3 = Amps
R_3 = 6 Ohms

P_6 = Watts
E_6 = Volts
I_6 = Amps
R_6 = 18 Ohms

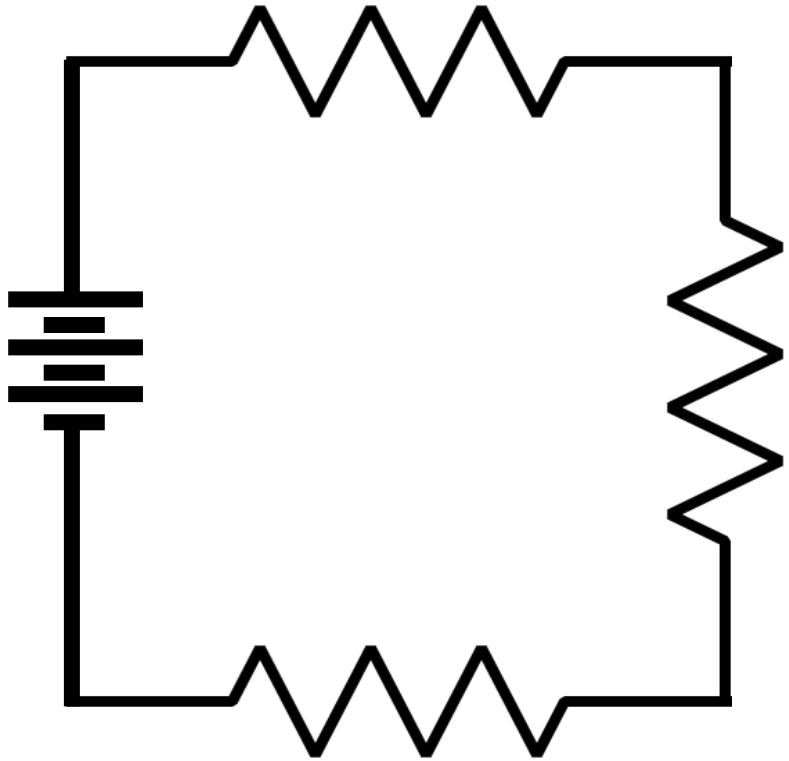
$$R_{4,5,6} = 2+4+18 = 24 \text{ Ohms}$$

$$R_{2,4,5,6} = \frac{R_2 \times R_{4,5,6}}{R_2 + R_{4,5,6}} = \frac{16 \times 24}{16+24} = \frac{384}{40} = 9.6 \text{ Ohms}$$

$$R_{2,4,5,6} = 9.6 \text{ Ohms}$$

$P_1 =$ Watts
$E_1 =$ Volts
$I_1 =$ Amps
$R_1 =$ 4 Ohms

$R_{2,4,5,6} = 9.6$ Ohms



$P_T =$ Watts
$E_T =$ 24 Volts
$I_T =$ Amps
$R_T =$ Ohms

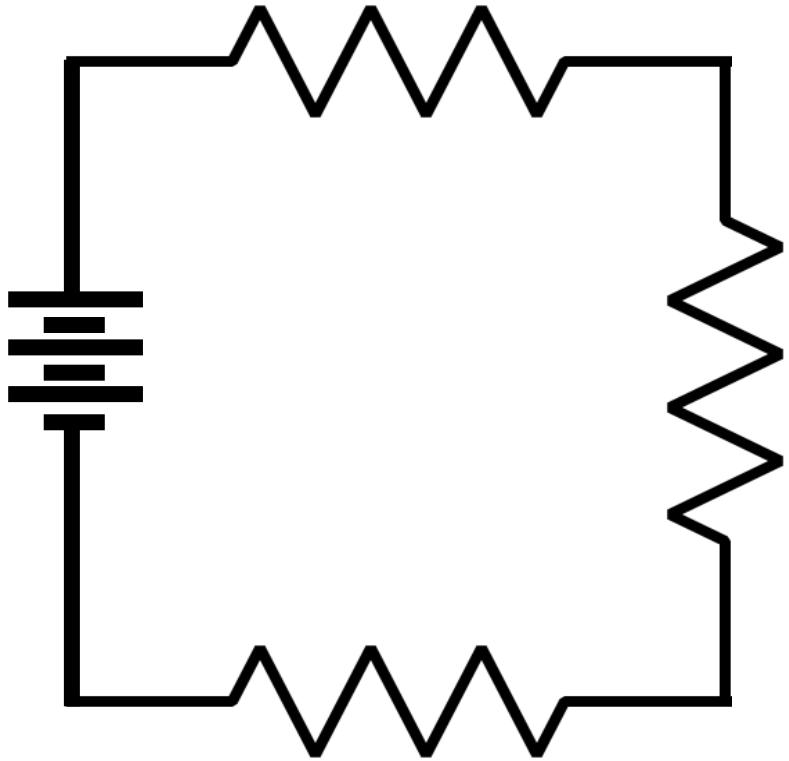
$P_{2,4,5,6} =$ Watts
$E_{2.4.5.6} =$ Volts
$I_{2.4.5.6} =$ Amps
$R_{2,4,5,6} =$ 9.6 Ohms

$P_3 =$ Watts
$E_3 =$ Volts
$I_3 =$ Amps
$R_3 =$ 6 Ohms

Math

Rule

$P_1 =$ Watts
$E_1 =$ Volts
$I_1 =$ Amps
$R_1 =$ 4 Ohms



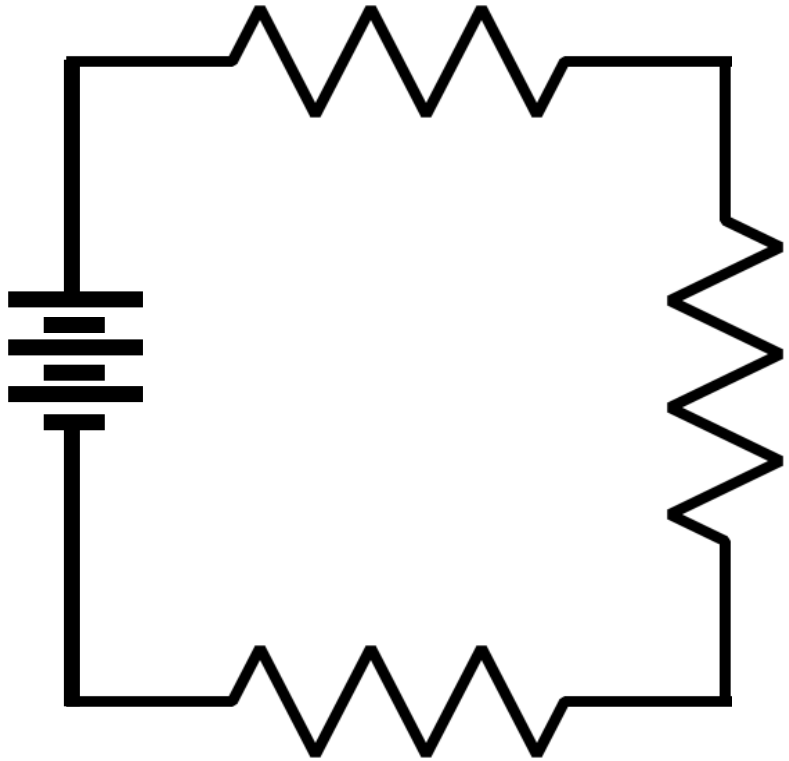
$P_T =$ Watts
$E_T =$ 24 Volts
$I_T =$ Amps
$R_T =$ Ohms

$P_{2,4,5,6} =$ Watts
$E_{2.4.5.6} =$ Volts
$I_{2.4.5.6} =$ Amps
$R_{2,4,5,6} =$ 9.6 Ohms

$P_3 =$ Watts
$E_3 =$ Volts
$I_3 =$ Amps
$R_3 =$ 6 Ohms

$P_1 =$ Watts
$E_1 =$ Volts
$I_1 =$ Amps
$R_1 =$ 4 Ohms

$R_T = R_1 + R_{2,4,5,6} + R_3 = 4 + 9.6 + 6 = 19.6$ Ohms



$P_T =$ Watts
$E_T =$ 24 Volts
$I_T =$ Amps
$R_T =$ 19.6 Ohms

$P_{2,4,5,6} =$ Watts
$E_{2.4.5.6} =$ Volts
$I_{2.4.5.6} =$ Amps
$R_{2,4,5,6} =$ 9.6 Ohms

$P_3 =$ Watts
$E_3 =$ Volts
$I_3 =$ Amps
$R_3 =$ 6 Ohms

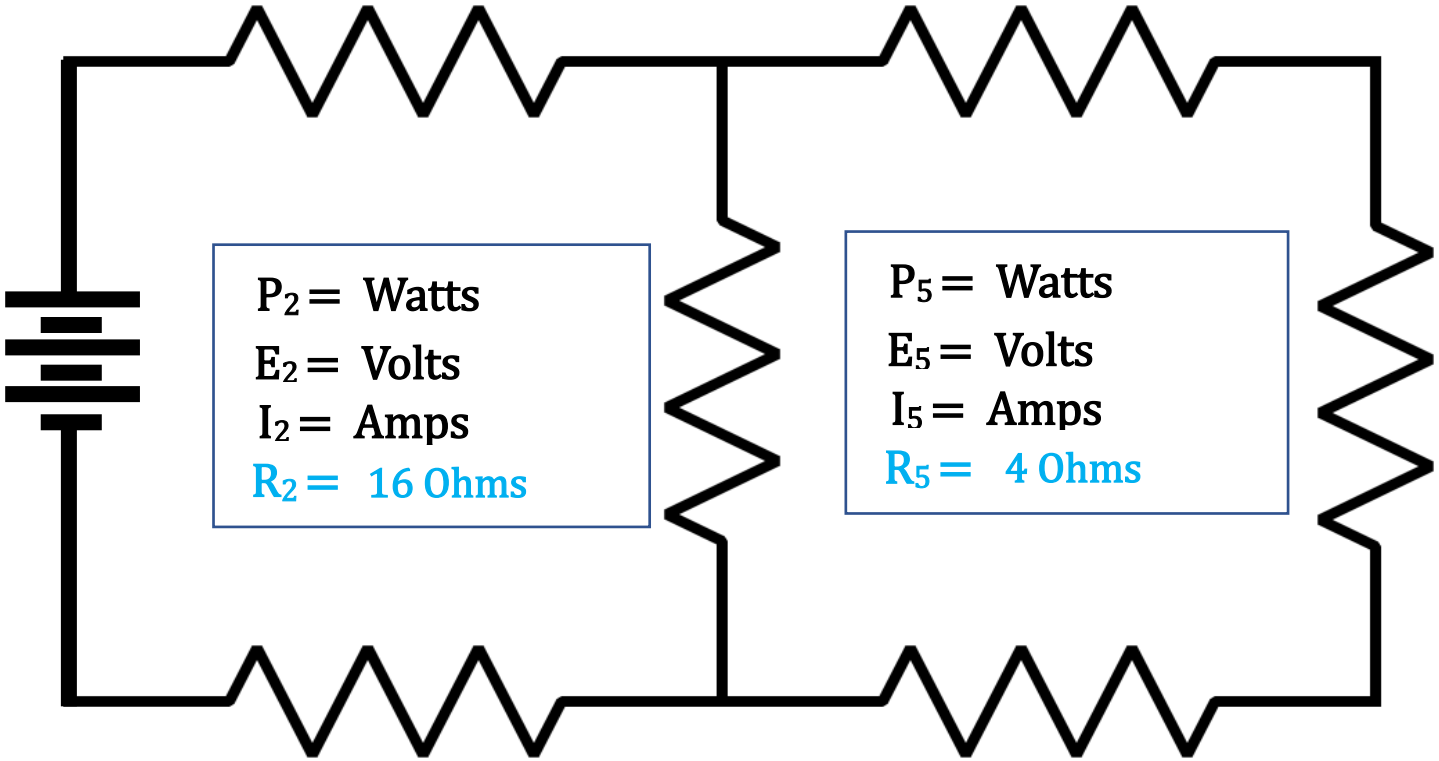
Math

Rule

$P_1 =$ Watts
$E_1 =$ Volts
$I_1 =$ Amps
$R_1 =$ 4 Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 =$ 2 Ohms

$P_T =$ Watts
$E_T =$ 24 Volts
$I_T =$ Amps
$R_T =$ 19.6 Ohms



$P_2 =$ Watts
$E_2 =$ Volts
$I_2 =$ Amps
$R_2 =$ 16 Ohms

$P_5 =$ Watts
$E_5 =$ Volts
$I_5 =$ Amps
$R_5 =$ 4 Ohms

$P_3 =$ Watts
$E_3 =$ Volts
$I_3 =$ Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 =$ 18 Ohms

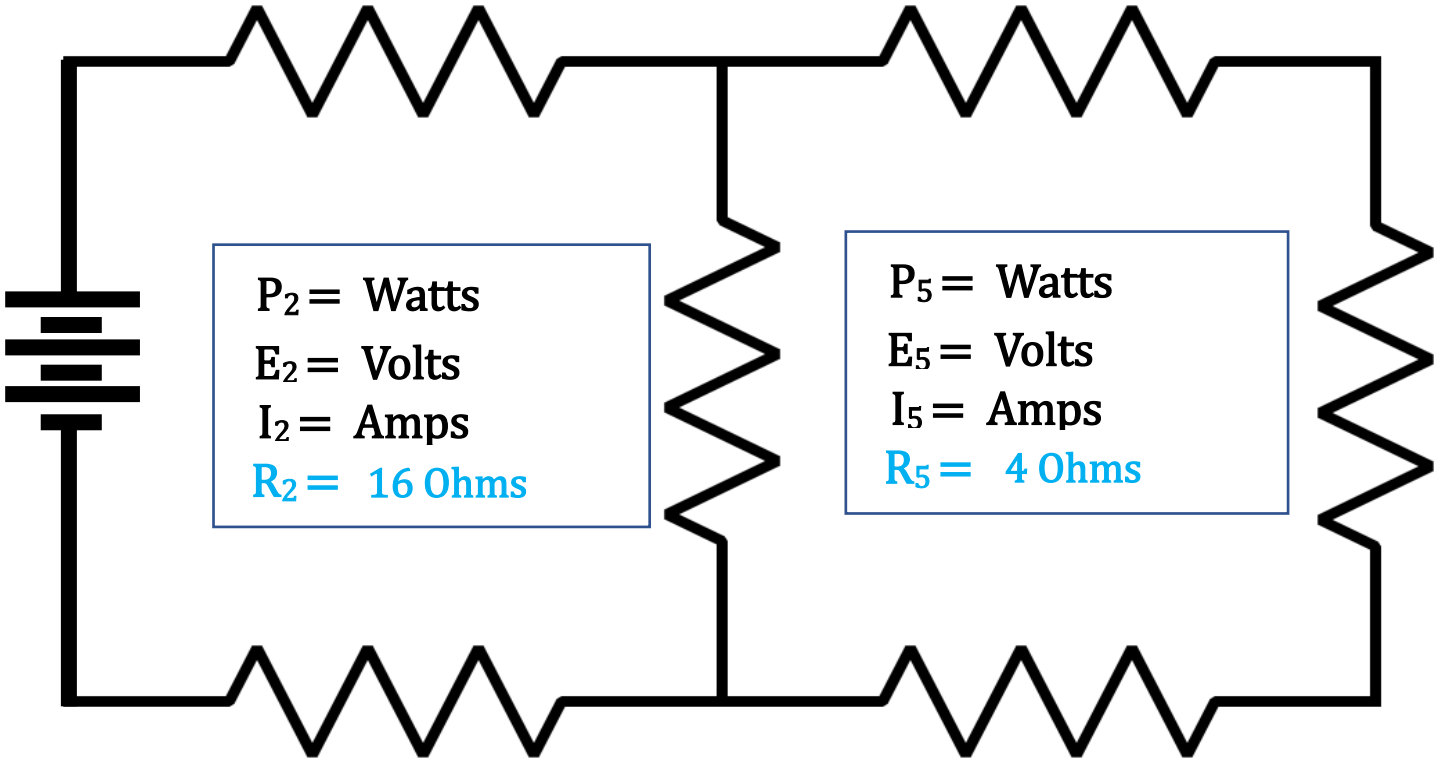
Math

Rule

$P_1 =$ Watts
$E_1 =$ Volts
$I_1 =$ Amps
$R_1 =$ 4 Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 =$ 2 Ohms

$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms



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$E_5 =$ Volts
$I_5 =$ Amps
$R_5 =$ 4 Ohms

$P_3 =$ Watts
$E_3 =$ Volts
$I_3 =$ Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 =$ 18 Ohms

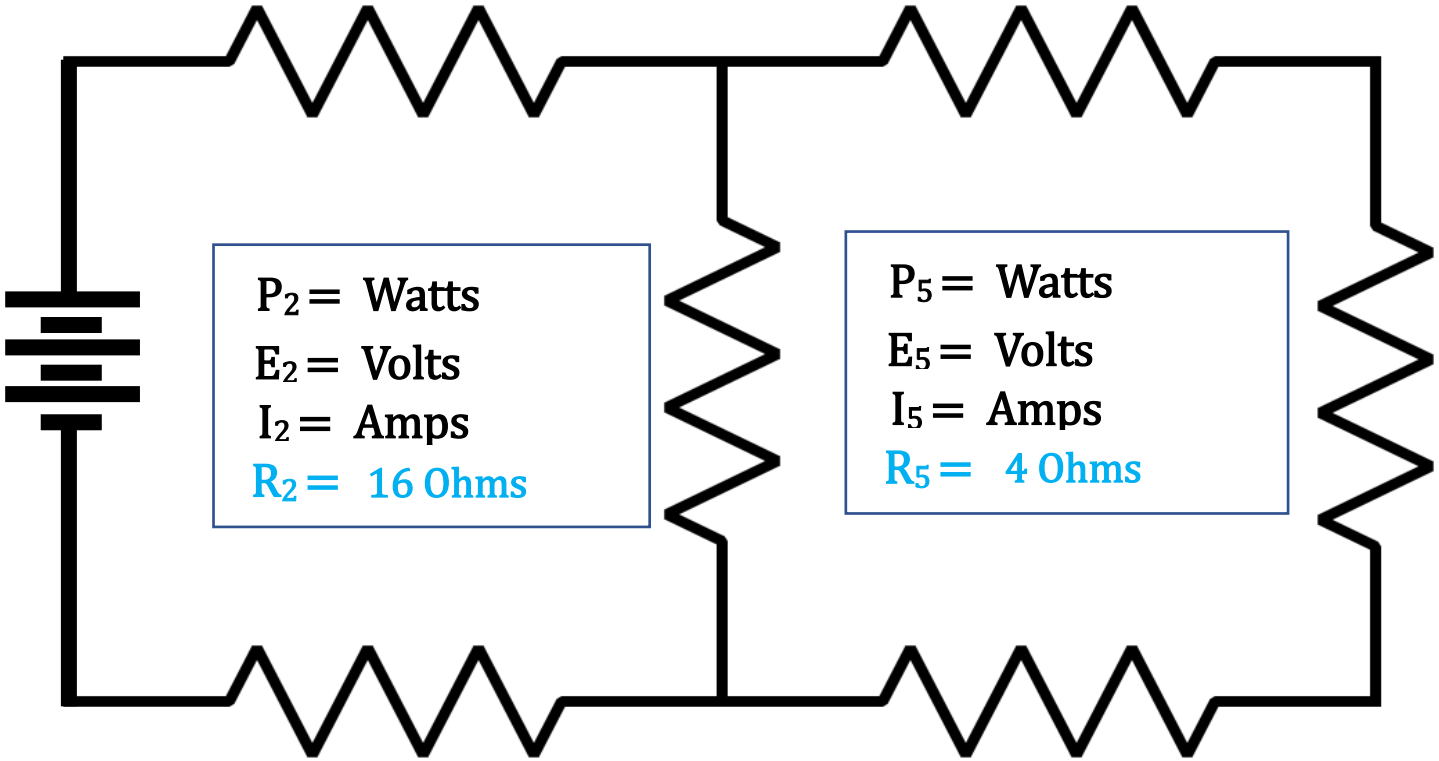
Math

Rule

$P_1 =$ Watts
$E_1 =$ Volts
$I_1 = 1.22$ Amps
$R_1 = 4$ Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 = 2$ Ohms

$P_T = 29.28$ Watts
$E_T = 24$ Volts
$I_T = 1.22$ Amps
$R_T = 19.6$ Ohms



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$E_5 =$ Volts
$I_5 =$ Amps
$R_5 = 4$ Ohms

$P_3 =$ Watts
$E_3 =$ Volts
$I_3 = 1.22$ Amps
$R_3 = 6$ Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 = 18$ Ohms

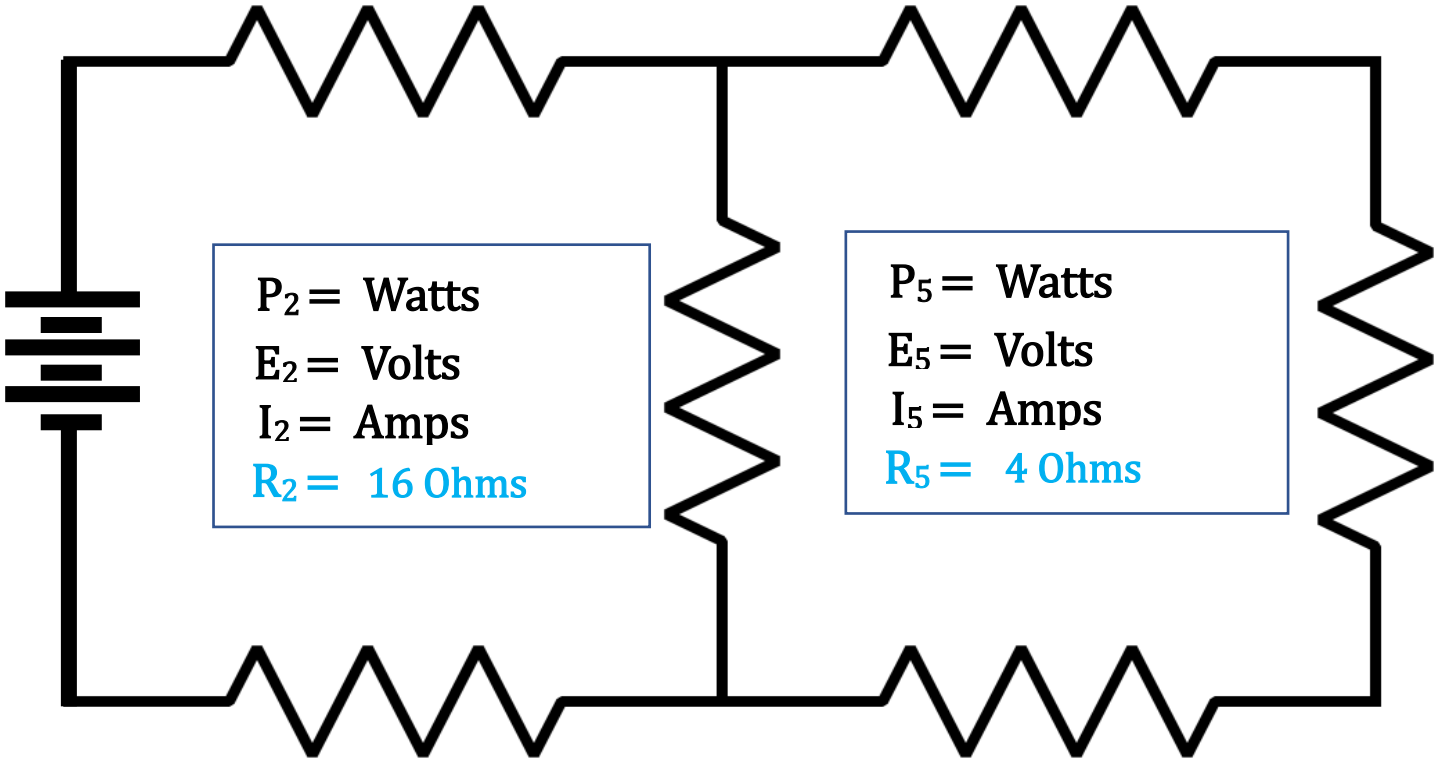
Math

Rule

$P_1 =$ 5.95 Watts
$E_1 =$ 4.88 Volts
$I_1 =$ 1.22 Amps
$R_1 =$ 4 Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 =$ 2 Ohms

$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms



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$E_5 =$ Volts
$I_5 =$ Amps
$R_5 =$ 4 Ohms

$P_3 =$ Watts
$E_3 =$ Volts
$I_3 =$ 1.22 Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 =$ 18 Ohms

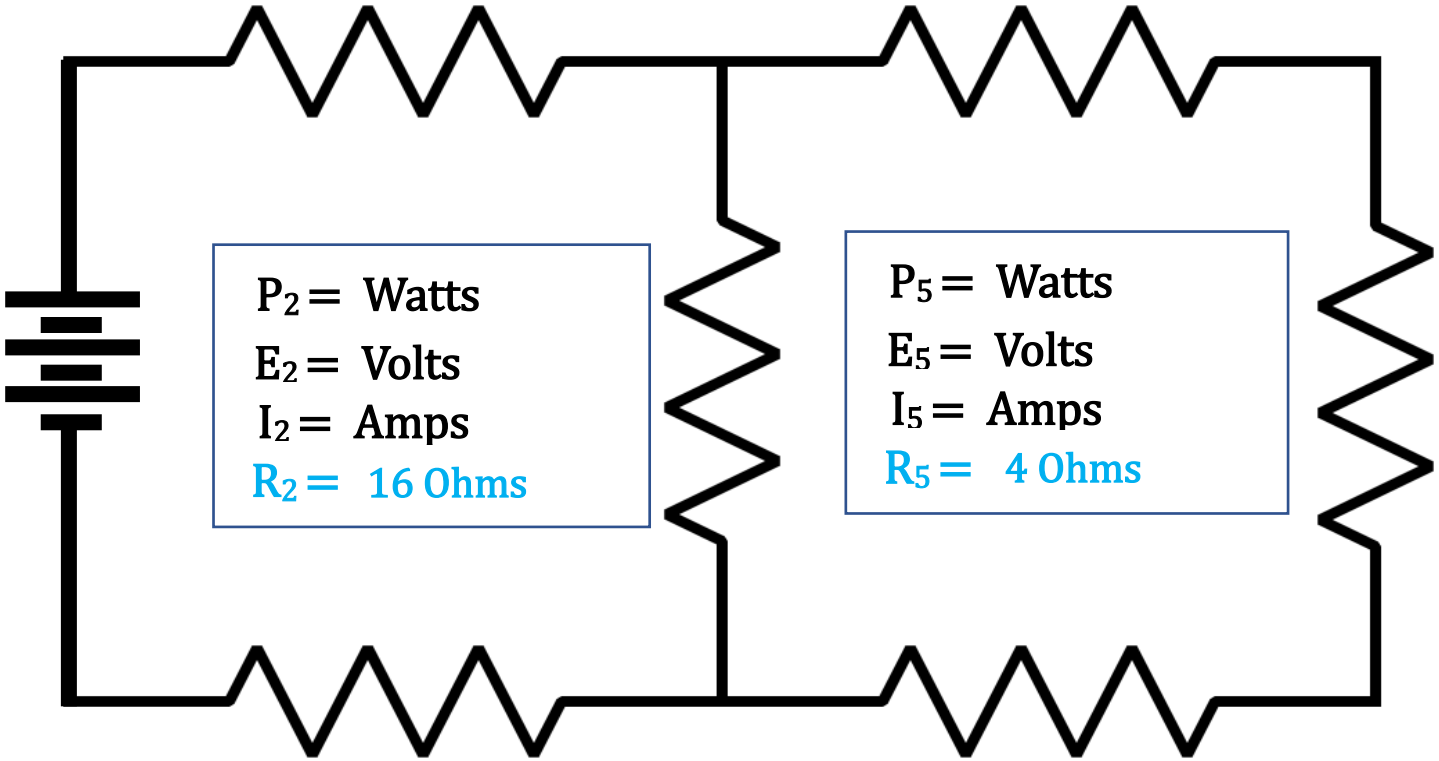
Math

Rule

$P_1 =$ 5.95 Watts
$E_1 =$ 4.88 Volts
$I_1 =$ 1.22 Amps
$R_1 =$ 4 Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 =$ 2 Ohms

$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms



$P_2 =$ Watts
$E_2 =$ Volts
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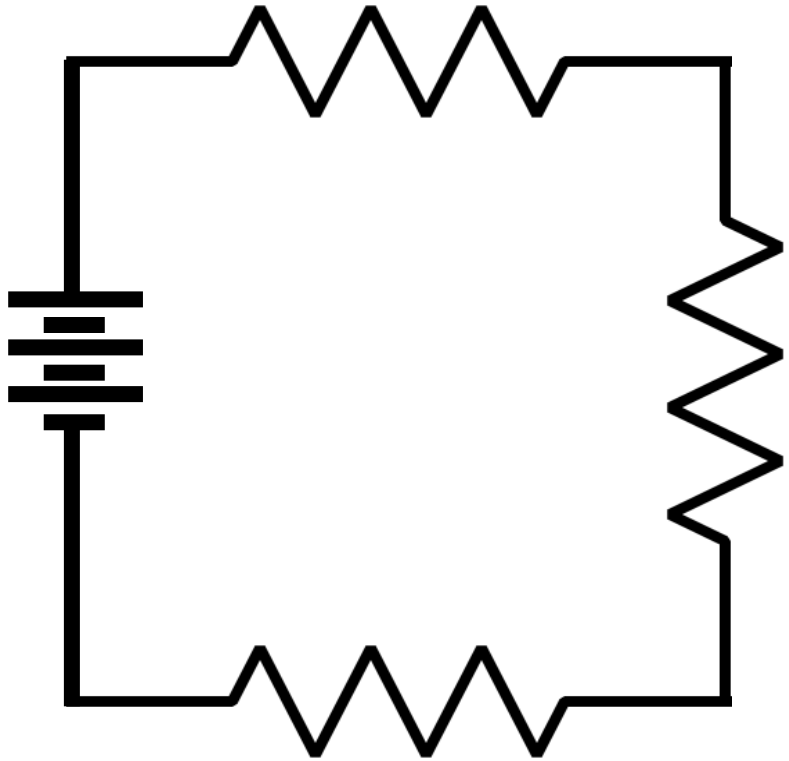
$P_5 =$ Watts
$E_5 =$ Volts
$I_5 =$ Amps
$R_5 =$ 4 Ohms

$P_3 =$ 8.93 Watts
$E_3 =$ 7.32 Volts
$I_3 =$ 1.22 Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 =$ 18 Ohms

$P_1 =$ 5.95 Watts
$E_1 =$ 4.88 Volts
$I_1 =$ 1.22 Amps
$R_1 =$ 4 Ohms



$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms

$P_{2,4,5,6} =$ Watts
$E_{2.4.5.6} =$ Volts
$I_{2.4.5.6} =$ Amps
$R_{2,4,5,6} =$ 9.6 Ohms

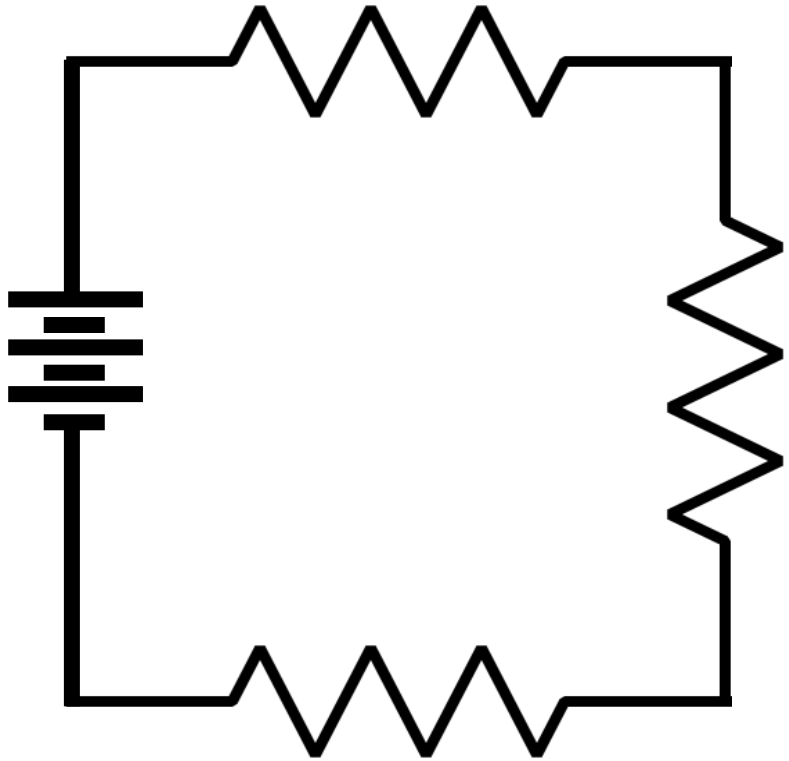
$P_3 =$ 8.93 Watts
$E_3 =$ 7.32 Volts
$I_3 =$ 1.22 Amps
$R_3 =$ 6 Ohms

$P_1 = 5.95$ Watts
$E_1 = 4.88$ Volts
$I_1 = 1.22$ Amps
$R_1 = 4$ Ohms

$E_{2,(4,5,6)} = E_T - E_1 - E_3$

$E_{2,(4,5,6)} = 24 - 4.88 - 7.32 = 11.8$ Volts

$P_T = 29.28$ Watts
$E_T = 24$ Volts
$I_T = 1.22$ Amps
$R_T = 19.6$ Ohms



$P_{2,4,5,6} =$ Watts
$E_{2.4.5.6} =$ Volts
$I_{2.4.5.6} =$ Amps
$R_{2,4,5,6} = 9.6$ Ohms

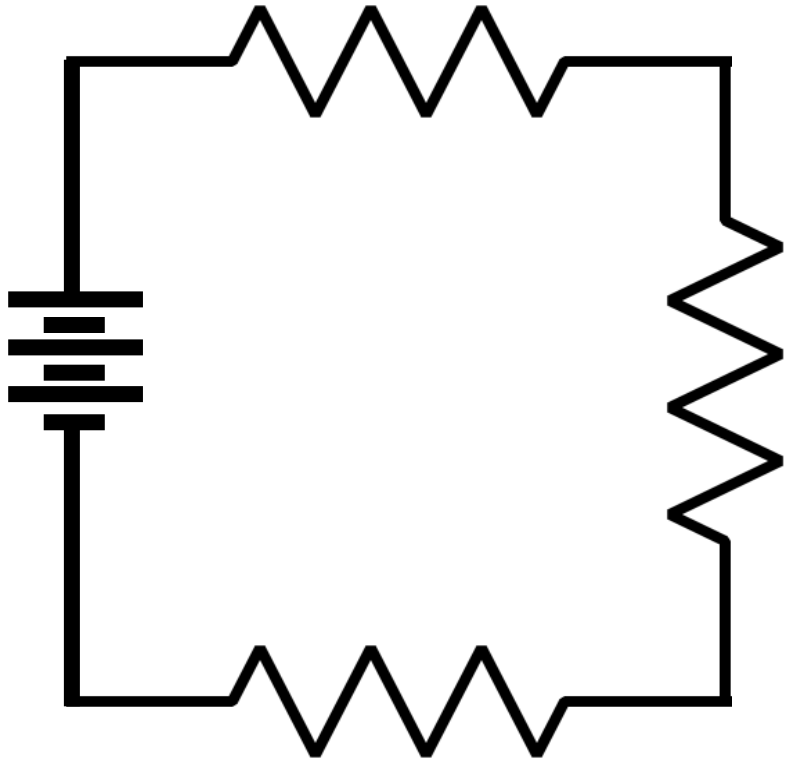
$P_3 = 8.93$ Watts
$E_3 = 7.32$ Volts
$I_3 = 1.22$ Amps
$R_3 = 6$ Ohms

$P_1 = 5.95$ Watts
$E_1 = 4.88$ Volts
$I_1 = 1.22$ Amps
$R_1 = 4$ Ohms

$E_{2,(4,5,6)} = E_T - E_1 - E_3$

$E_{2,(4,5,6)} = 24 - 4.88 - 7.32 = 11.8$ Volts

$P_T = 29.28$ Watts
$E_T = 24$ Volts
$I_T = 1.22$ Amps
$R_T = 19.6$ Ohms



$P_{2,4,5,6} =$ Watts
$E_{2.4.5.6} = 11.8$
$I_{2.4.5.6} =$ Amps
$R_{2,4,5,6} = 9.6$ Ohms

$P_3 = 8.93$ Watts
$E_3 = 7.32$ Volts
$I_3 = 1.22$ Amps
$R_3 = 6$ Ohms

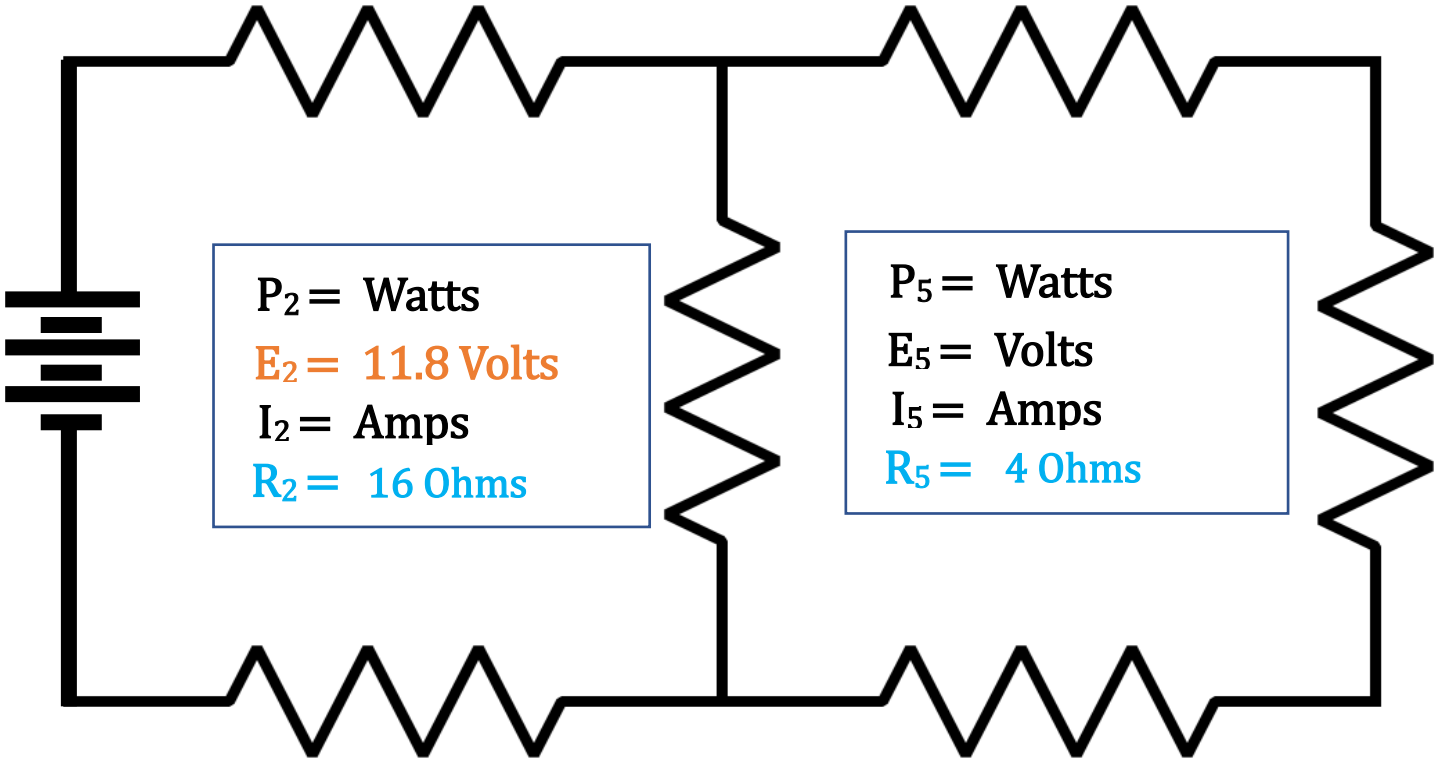
Math

Rule

$P_1 =$ 5.95 Watts
$E_1 =$ 4.88 Volts
$I_1 =$ 1.22 Amps
$R_1 =$ 4 Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 =$ 2 Ohms

$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms



$P_2 =$ Watts
$E_2 =$ 11.8 Volts
$I_2 =$ Amps
$R_2 =$ 16 Ohms

$P_5 =$ Watts
$E_5 =$ Volts
$I_5 =$ Amps
$R_5 =$ 4 Ohms

$P_3 =$ 8.93 Watts
$E_3 =$ 7.32 Volts
$I_3 =$ 1.22 Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 =$ 18 Ohms

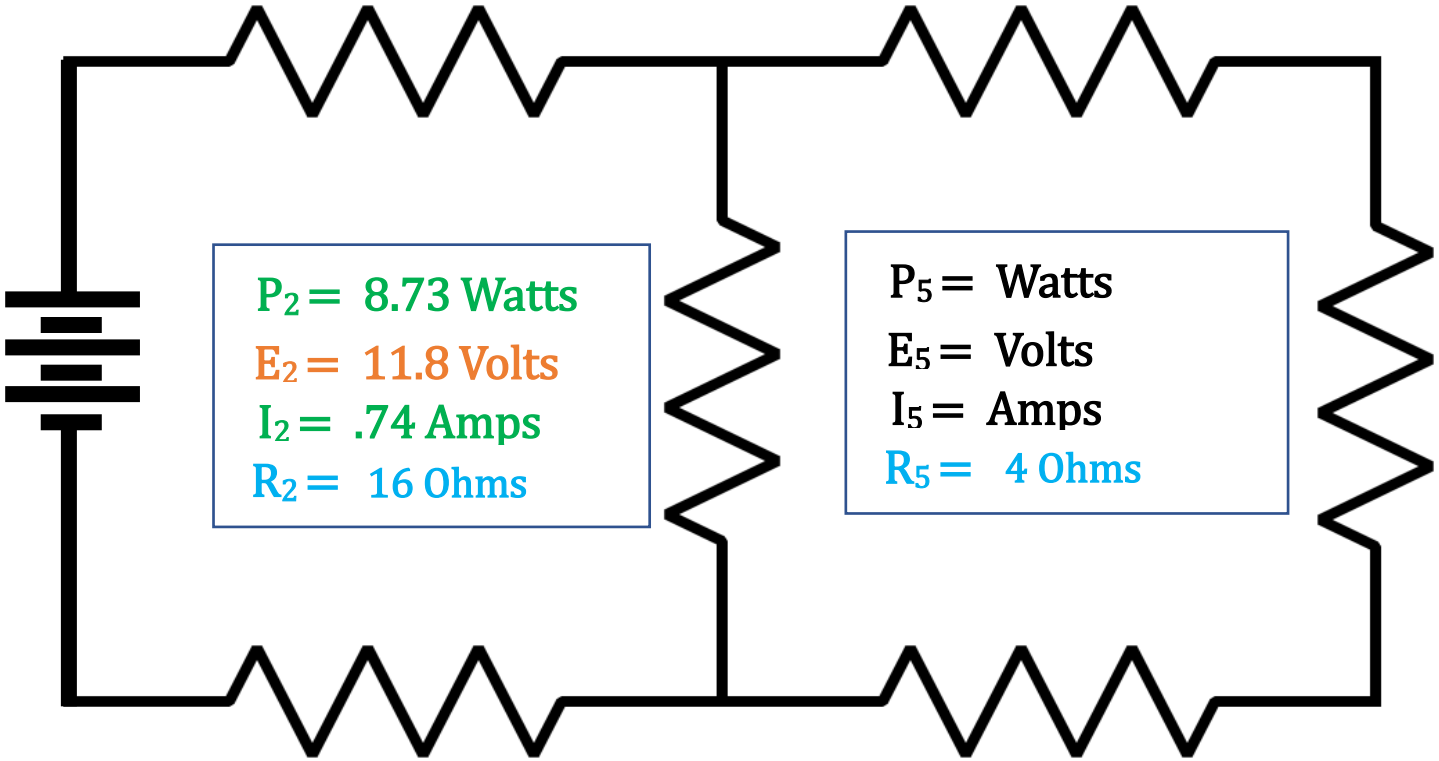
Math

Rule

$P_1 =$ 5.95 Watts
$E_1 =$ 4.88 Volts
$I_1 =$ 1.22 Amps
$R_1 =$ 4 Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 =$ 2 Ohms

$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms



$P_2 =$ 8.73 Watts
$E_2 =$ 11.8 Volts
$I_2 =$ .74 Amps
$R_2 =$ 16 Ohms

$P_5 =$ Watts
$E_5 =$ Volts
$I_5 =$ Amps
$R_5 =$ 4 Ohms

$P_3 =$ 8.93 Watts
$E_3 =$ 7.32 Volts
$I_3 =$ 1.22 Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 =$ 18 Ohms

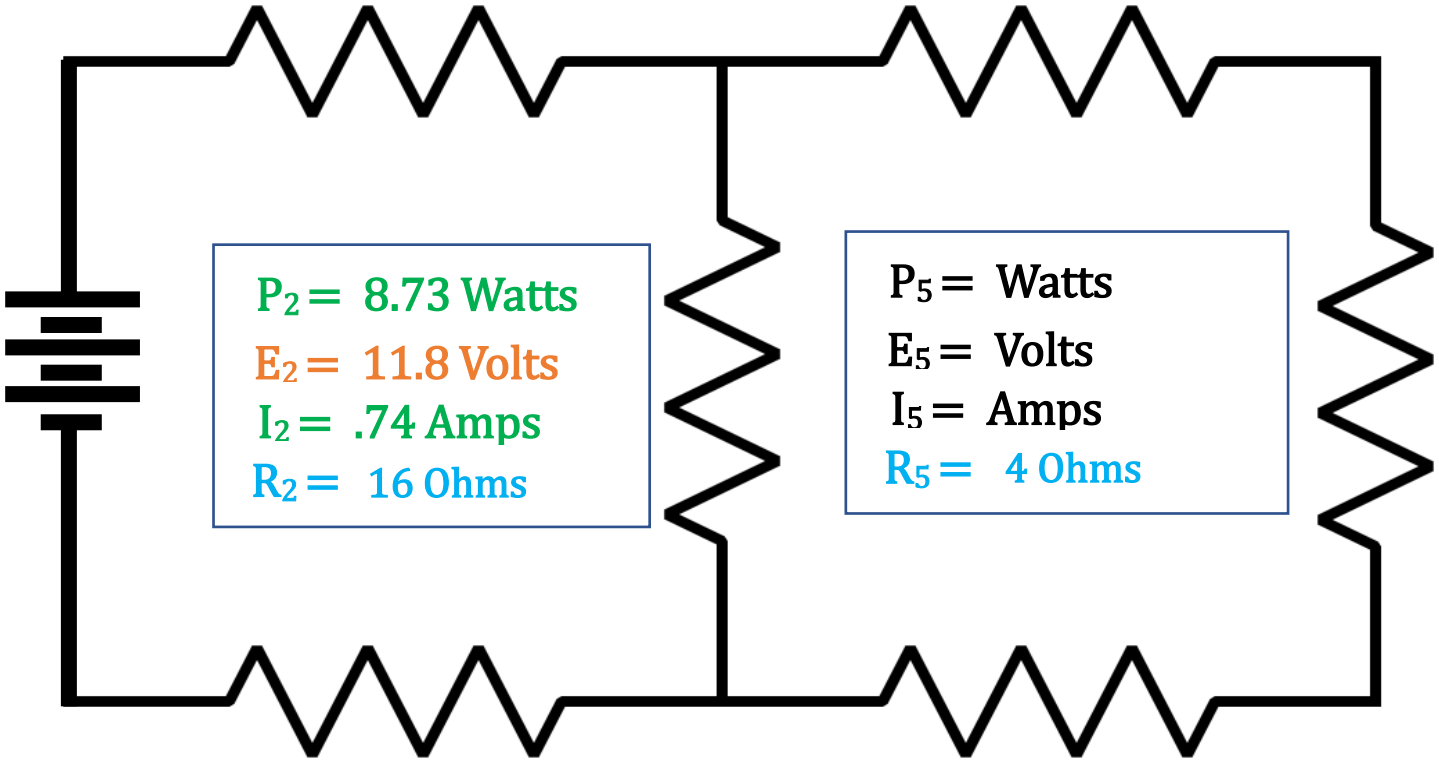
Math

Rule

$P_1 = 5.95$ Watts
$E_1 = 4.88$ Volts
$I_1 = 1.22$ Amps
$R_1 = 4$ Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ Amps
$R_4 = 2$ Ohms

$P_T = 29.28$ Watts
$E_T = 24$ Volts
$I_T = 1.22$ Amps
$R_T = 19.6$ Ohms



$P_2 = 8.73$ Watts
$E_2 = 11.8$ Volts
$I_2 = .74$ Amps
$R_2 = 16$ Ohms

$P_5 =$ Watts
$E_5 =$ Volts
$I_5 =$ Amps
$R_5 = 4$ Ohms

$P_3 = 8.93$ Watts
$E_3 = 7.32$ Volts
$I_3 = 1.22$ Amps
$R_3 = 6$ Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ Amps
$R_6 = 18$ Ohms

$$I_{(4,5,6)} = I_T - I_2$$

$$I_{(4,5,6)} = 1.22 - .74 = .48 \text{ Amps}$$

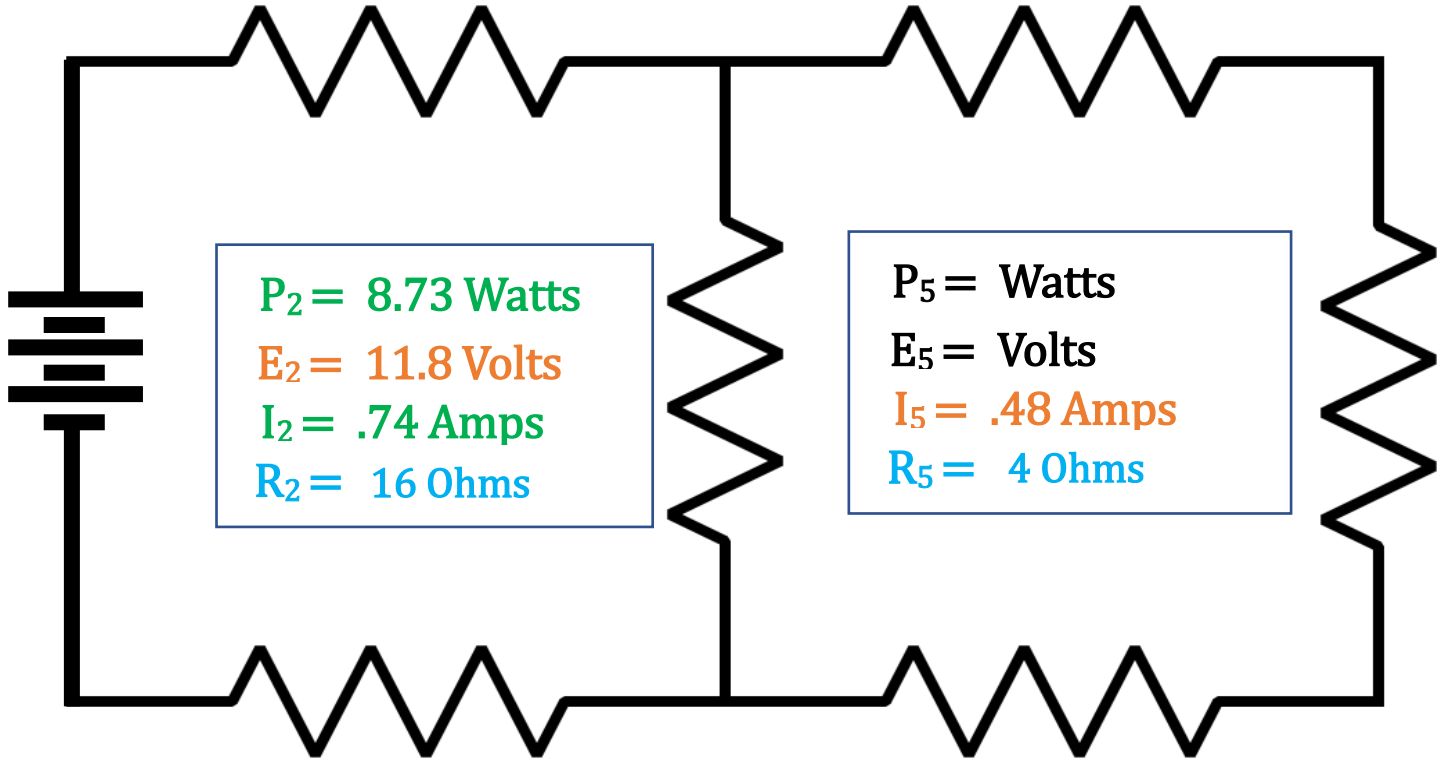
Math

Rule

$P_1 = 5.95$ Watts
$E_1 = 4.88$ Volts
$I_1 = 1.22$ Amps
$R_1 = 4$ Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 = .48$ Amps
$R_4 = 2$ Ohms

$P_T = 29.28$ Watts
$E_T = 24$ Volts
$I_T = 1.22$ Amps
$R_T = 19.6$ Ohms



$P_2 = 8.73$ Watts
$E_2 = 11.8$ Volts
$I_2 = .74$ Amps
$R_2 = 16$ Ohms

$P_5 =$ Watts
$E_5 =$ Volts
$I_5 = .48$ Amps
$R_5 = 4$ Ohms

$P_3 = 8.93$ Watts
$E_3 = 7.32$ Volts
$I_3 = 1.22$ Amps
$R_3 = 6$ Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 = .48$ Amps
$R_6 = 18$ Ohms

$$I_{(4,5,6)} = I_T - I_2$$

$$I_{(4,5,6)} = 1.22 - .74 = .48 \text{ Amps}$$

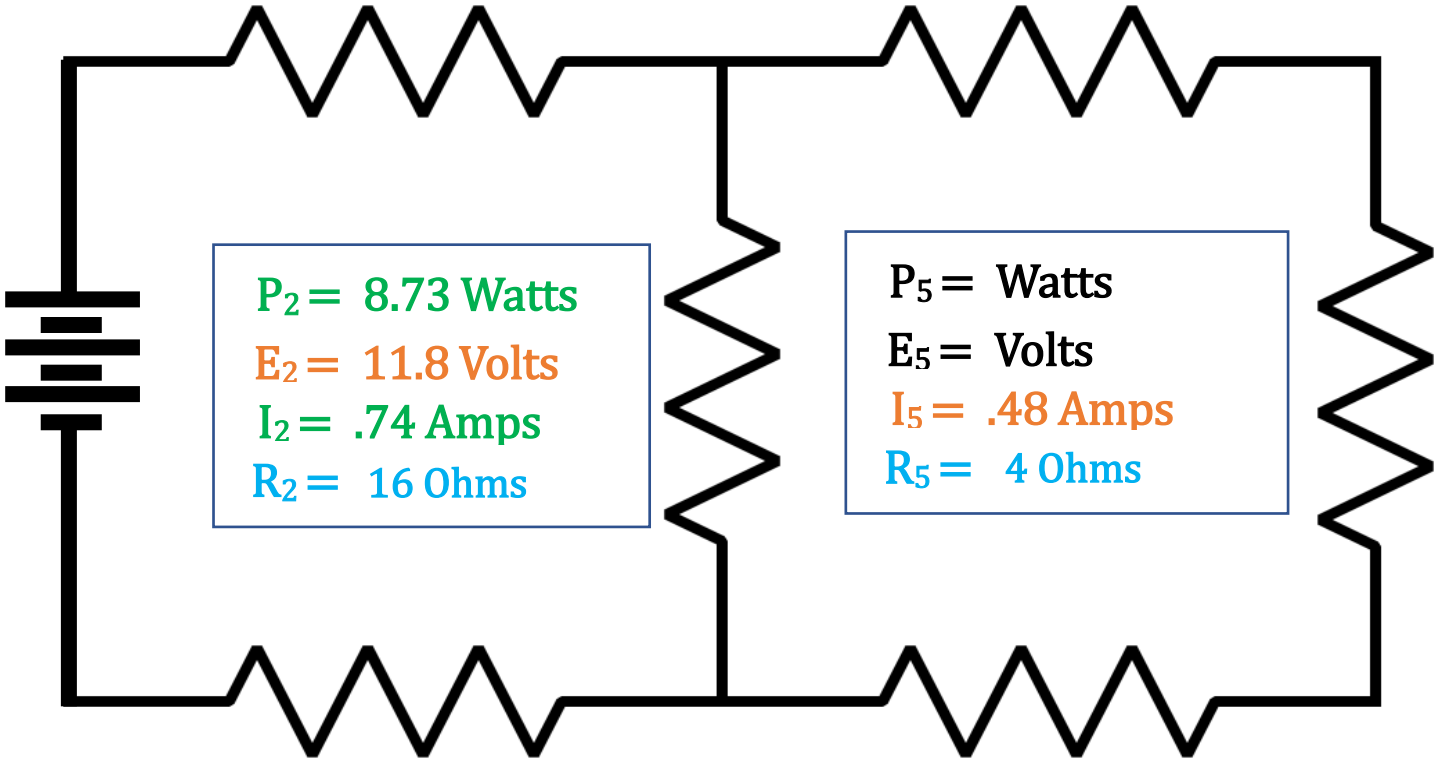
Math

Rule

$P_1 =$ 5.95 Watts
$E_1 =$ 4.88 Volts
$I_1 =$ 1.22 Amps
$R_1 =$ 4 Ohms

$P_4 =$ Watts
$E_4 =$ Volts
$I_4 =$ .48 Amps
$R_4 =$ 2 Ohms

$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms



$P_2 =$ 8.73 Watts
$E_2 =$ 11.8 Volts
$I_2 =$ .74 Amps
$R_2 =$ 16 Ohms

$P_5 =$ Watts
$E_5 =$ Volts
$I_5 =$ .48 Amps
$R_5 =$ 4 Ohms

$P_3 =$ 8.93 Watts
$E_3 =$ 7.32 Volts
$I_3 =$ 1.22 Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ .48 Amps
$R_6 =$ 18 Ohms

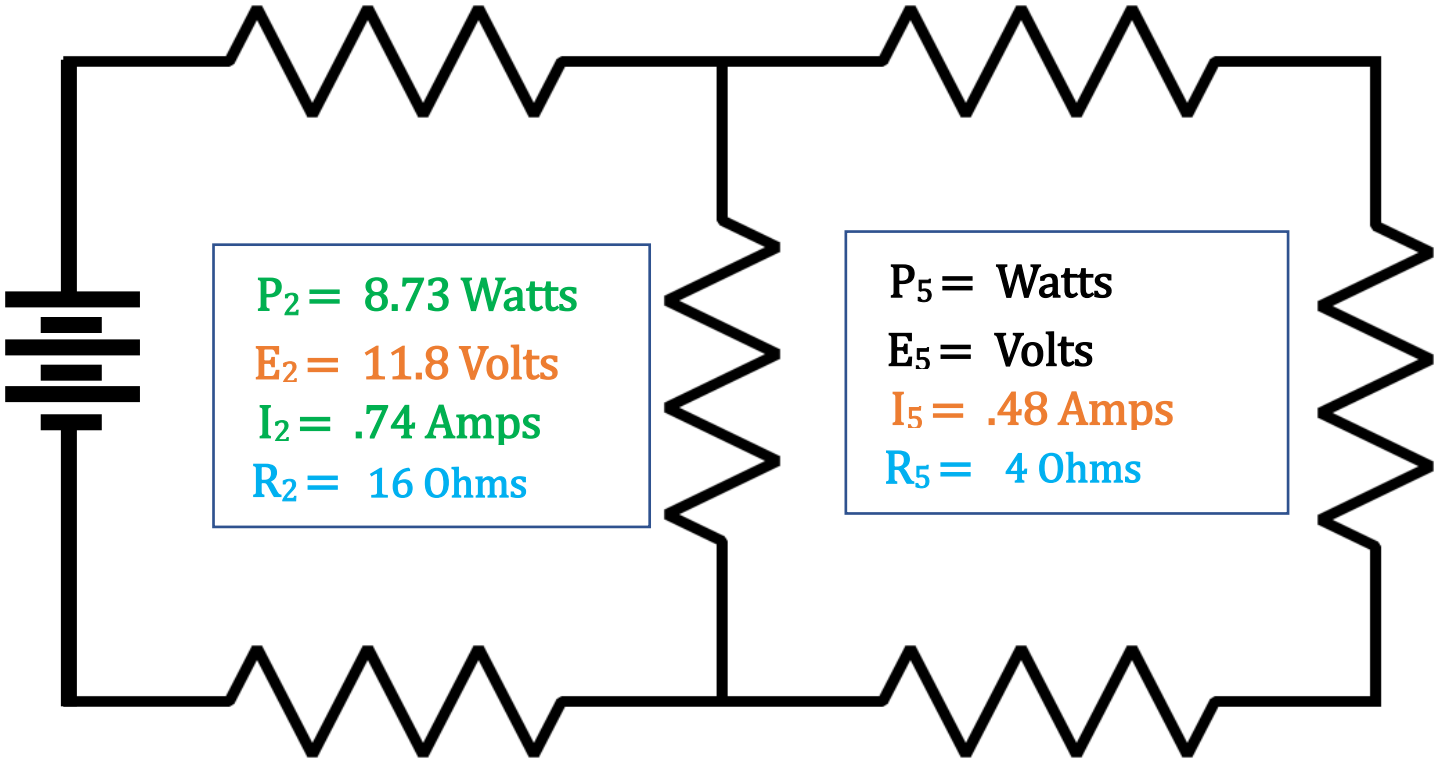
Math

Rule

$P_1 =$ 5.95 Watts
$E_1 =$ 4.88 Volts
$I_1 =$ 1.22 Amps
$R_1 =$ 4 Ohms

$P_4 =$ .46 Watts
$E_4 =$ .96 Volts
$I_4 =$ .48 Amps
$R_4 =$ 2 Ohms

$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms



$P_2 =$ 8.73 Watts
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$I_2 =$ .74 Amps
$R_2 =$ 16 Ohms

$P_5 =$ Watts
$E_5 =$ Volts
$I_5 =$ .48 Amps
$R_5 =$ 4 Ohms

$P_3 =$ 8.93 Watts
$E_3 =$ 7.32 Volts
$I_3 =$ 1.22 Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ .48 Amps
$R_6 =$ 18 Ohms

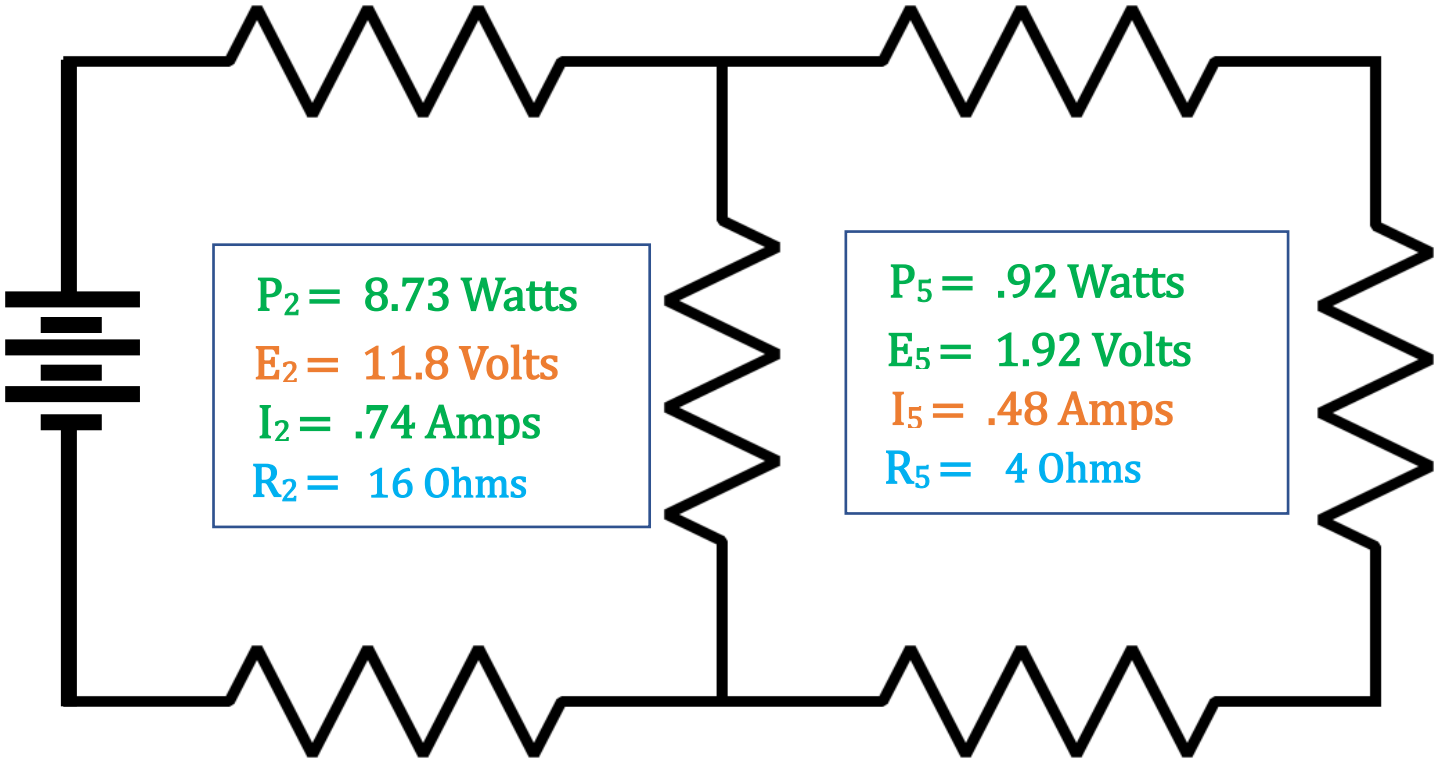
Math

Rule

$P_1 =$ 5.95 Watts
$E_1 =$ 4.88 Volts
$I_1 =$ 1.22 Amps
$R_1 =$ 4 Ohms

$P_4 =$ .46 Watts
$E_4 =$ .96 Volts
$I_4 =$ .48 Amps
$R_4 =$ 2 Ohms

$P_T =$ 29.28 Watts
$E_T =$ 24 Volts
$I_T =$ 1.22 Amps
$R_T =$ 19.6 Ohms



$P_2 =$ 8.73 Watts
$E_2 =$ 11.8 Volts
$I_2 =$ .74 Amps
$R_2 =$ 16 Ohms

$P_5 =$ .92 Watts
$E_5 =$ 1.92 Volts
$I_5 =$ .48 Amps
$R_5 =$ 4 Ohms

$P_3 =$ 8.93 Watts
$E_3 =$ 7.32 Volts
$I_3 =$ 1.22 Amps
$R_3 =$ 6 Ohms

$P_6 =$ Watts
$E_6 =$ Volts
$I_6 =$ .48 Amps
$R_6 =$ 18 Ohms

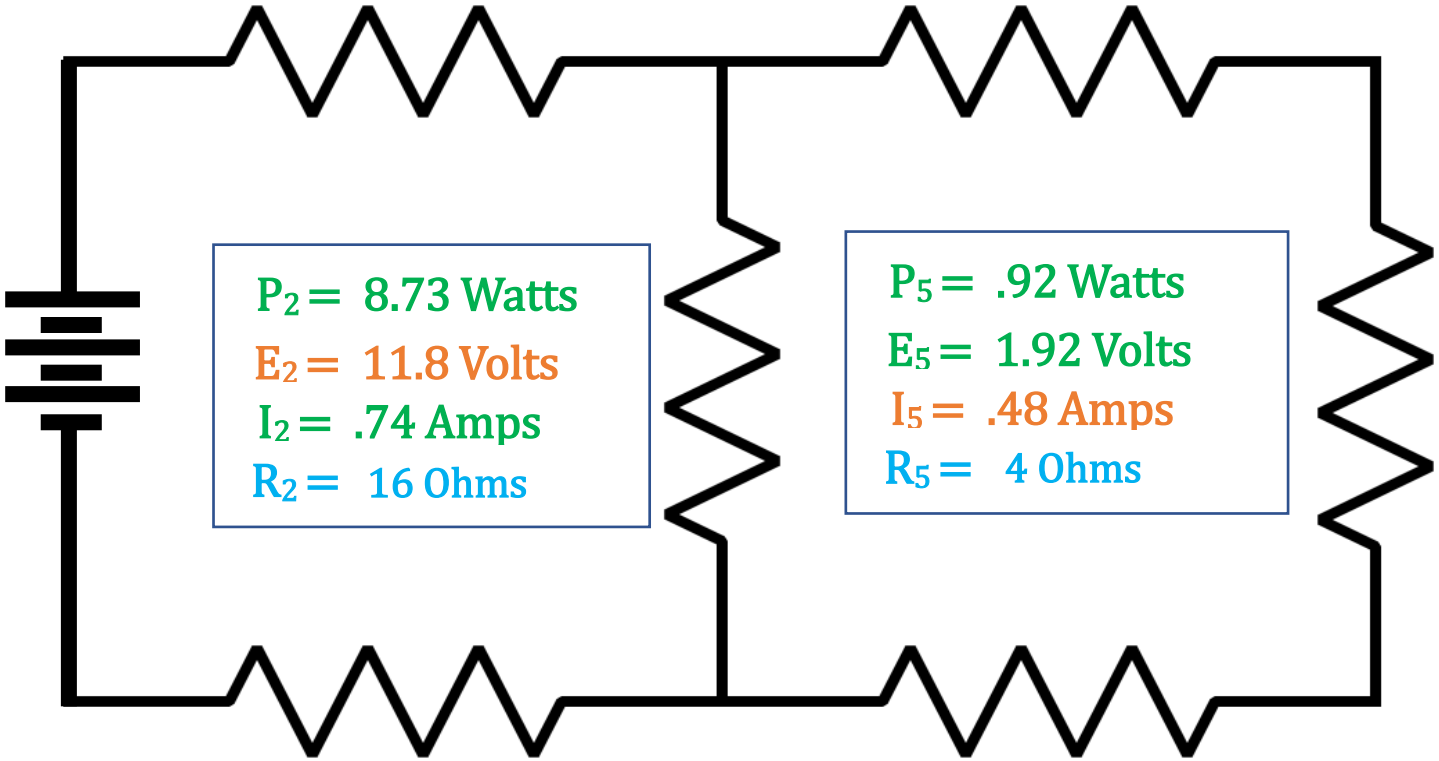
Math

Rule

$P_1 = 5.95$ Watts
$E_1 = 4.88$ Volts
$I_1 = 1.22$ Amps
$R_1 = 4$ Ohms

$P_4 = .46$ Watts
$E_4 = .96$ Volts
$I_4 = .48$ Amps
$R_4 = 2$ Ohms

$P_T = 29.28$ Watts
$E_T = 24$ Volts
$I_T = 1.22$ Amps
$R_T = 19.6$ Ohms



$P_2 = 8.73$ Watts
$E_2 = 11.8$ Volts
$I_2 = .74$ Amps
$R_2 = 16$ Ohms

$P_5 = .92$ Watts
$E_5 = 1.92$ Volts
$I_5 = .48$ Amps
$R_5 = 4$ Ohms

$P_3 = 8.93$ Watts
$E_3 = 7.32$ Volts
$I_3 = 1.22$ Amps
$R_3 = 6$ Ohms

$P_6 = 4.15$ Watts
$E_6 = 8.64$ Volts
$I_6 = .48$ Amps
$R_6 = 18$ Ohms