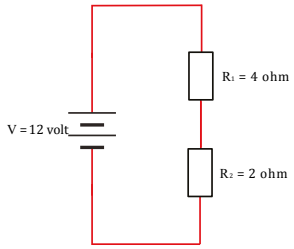
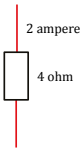
Finding the the power dissipated by resistors in series

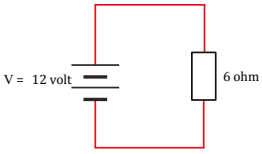


$R = R_1 + R_2$
$= 4 \text{ ohm} + 2 \text{ ohm}$
$= 6 \text{ ohm}$

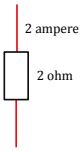


$V_1 = R_1 \times I$
$= 4 \text{ ohm} \times 2 \text{ ampere}$
$= 8 \text{ volts}$

$P_1 = V_1 \times I$
$= 8 \text{ volt} \times 2 \text{ ampere}$
$= 16 \text{ watt}$



$I = \frac{V}{R}$
$= \frac{12 \text{ volt}}{6 \text{ ohm}}$
$= 2 \text{ ampere}$



$V_2 = R_2 \times I$
$= 2 \text{ ohm} \times 2 \text{ ampere}$
$= 4 \text{ volt}$

$P_2 = V_2 \times I$
$= 4 \text{ volt} \times 2 \text{ ampere}$
$= 8 \text{ watt}$

$P = V \times I$
$= 12 \text{ volt} \times 2 \text{ ampere}$
$= 24 \text{ watt}$

$P = P_1 + P_2$
$= 16 \text{ watt} + 8 \text{ watt}$
$= 24 \text{ watt}$

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Calculation of the power dissipated by resistors in series

This document is a part of Supporting Physics Teaching, from the Ee topic, episode number 02, and the PN thread.

The location

http://supportingphysicsteaching.net/