**RESISTORS IN PARALLEL**

WORKSHEET

**GOALS**

* To confirm that resistors (R1, R2) in parallel are equivalent with a resistor (Rtot) of total resistance which is given by the formula $\frac{1}{R\_{ολ}}=$ $\frac{1}{R\_{1}}+ \frac{1}{R\_{2}}$.

**DISTANT ACTIVITY**

* Connect with the site: http:// e-science.web.auth.gr/circuits
* Click on the tab “Experiment” and connect with your own username and password (if you do not have you can sign in)
* Choose experiment 4 (Resistors in Parallel)
* Choose voltage from 0 to 4,12volts and fill in the matrix I

Matrix I

|  |  |  |  |
| --- | --- | --- | --- |
| # | Voltage(Volt) | Electric Current(mA) |  Resistance$ (R=\frac{V}{I})$(KΩ) |
| 1 | V1= | I1= | R1= |
| 2 | V2= | I2= | R2= |
| 3 | V3= | I3= | R3= |
| 4 | V4= | I4= | R4= |
| 5 | V5= | I5= | R5= |
| 6 | V6= | I6= | R6= |
| 7 | V7= | I7= | R7= |
| 8 | V8= | I8= | R8= |
| 9 | V9= | I9= | R9= |
| 10 | V10= | I10= | R10= |
| Mean Value | RM.V.=$ \frac{R\_{1}+R\_{2}+R\_{3}+R\_{4}+R\_{5}+R\_{6}+R\_{7}+R\_{8}+R\_{9}+R\_{10}}{10}$ |
|  |  |

**DATA ANALYSIS**

If R1=R2=1000Ω then which of the follow describes better the relationship between RM.V. , R1 and R2.

a. RM.V. = R1+R2 b. RM.V. = R1 – R2

c. RM.V. = R1∙R2 d. RM.V. = $\frac{R\_{2}}{R\_{1}}$

ε. $\frac{1}{R\_{M.V.}}=$ $\frac{1}{R\_{1}}+ \frac{1}{R\_{2}}$

**THINK**

a. As you can see in figure 1 the two resistors are connected in parallel. If it is given that Rtot=20Ω, and R2=30Ω, calculate the resistance of R1.

|  |
| --- |
| http://155.207.11.247/phpproject3/Rparallel.jpgΑ |

b. Total resistance of two resistors connected in .................... satisfies the formula .................... and it is always .................... (lower/greater) from the lowest resistor that we have used.

**Help us to improve ourselves!**

**Answer to the questionnaire!**