

U = 230 V P = 1800 W	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 30 Ω R <sub>3</sub> = 15 Ω Parallel	t = 2,3 min I = 2,8 A	U = 230 V P = 60 W	U = 230 V P = 60 W	P = 1800 W t = 90 min
<u>Resistance</u>	<u>R<sub>tot</sub> = ?</u>	<u>number of electrons?</u>	<u>Current</u>	<u>Resistance</u>	<u>Energy</u>
l = 50 cm Cu A = 8,0 mm <sup>2</sup>	R = 17 mΩ Cu A = 2,0 mm <sup>2</sup>	t = 1,15 min I = 5,6 A	U = 230 V P = 1800 W	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 60 Ω <u>R<sub>tot</sub> = 15 Ω</u> Parallel	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 30 Ω R <sub>3</sub> = 15 Ω Series
<u>Resistance?</u>	<u>length?</u>	<u>charge?</u>	<u>Current</u>	R <sub>3</sub> = ?	<u>R<sub>tot</sub> = ?</u>

**Bereken de vetgedrukte variabele**

11 mΩ	6,1 kWh	0,26 Ω	8,8*10 <sup>2</sup> Ω	6,7 Ω	4,0*10 <sup>19</sup>
3,9*10 <sup>2</sup> C	2,0 m	29,4 Ω	7,83 A	65 Ω	60 Ω

Spelidee en code van Henk Reuling

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U = 230 V P = 60 W	t = 2,3 min I = 2,8 A	U = 230 V P = 60 W	l = 50 cm Cu A = 8,0 mm <sup>2</sup>	R = 17 mΩ Cu A = 2,0 mm <sup>2</sup>	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 30 Ω R <sub>3</sub> = 15 Ω Series
<u>Current</u>	<u>number of electrons?</u>	<u>Resistance</u>	<u>Resistance?</u>	<u>length?</u>	<u>R<sub>tot</sub> = ?</u>
U = 230 V P = 1800 W	U = 230 V P = 1800 W	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 30 Ω R <sub>3</sub> = 15 Ω Parallel	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 60 Ω <u>R<sub>tot</sub> = 15 Ω</u> Parallel	P = 1800 W t = 90 min	t = 1,15 min I = 5,6 A
<u>Current</u>	<u>Resistance</u>	<u>R<sub>tot</sub> = ?</u>	<u>R<sub>3</sub> = ?</u>	<u>Energy</u>	<u>charge?</u>

Bereken de vetgedrukte variabele

65 Ω	4,0*10 <sup>19</sup>	3,9*10 <sup>2</sup> C	6,1 kWh	29,4 Ω	8,8*10 <sup>2</sup> Ω
6,7 Ω	60 Ω	11 <u>mΩ</u>	2,0 m	0,26 Ω	7,83 A

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U = 230 V P = 60 W	U = 230 V P = 60 W	t = 1,15 min I = 5,6 A	P = 1800 W t = 90 min	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 30 Ω R <sub>3</sub> = 15 Ω Series	t = 2,3 min I = 2,8 A
<u>Resistance</u>	<u>Current</u>	<u>charge?</u>	<u>Energy</u>	<u>R<sub>tot</sub> = ?</u>	<u>number of electrons?</u>
R <sub>1</sub> = 20 Ω R <sub>2</sub> = 30 Ω R <sub>3</sub> = 15 Ω Parallel	U = 230 V P = 1800 W	U = 230 V P = 1800 W	l = 50 cm Cu A = 8,0 mm <sup>2</sup>	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 60 Ω R <sub>tot</sub> = 15 Ω Parallel	R = 17 mΩ Cu A = 2,0 mm <sup>2</sup>
<u>R<sub>tot</sub> = ?</u>	<u>Resistance</u>	<u>Current</u>	<u>Resistance?</u>	<u>R<sub>3</sub> = ?</u>	<u>length?</u>

**Bereken de vetgedrukte variabele**

2,0 m	3,9*10 <sup>2</sup> C	60 Ω	65 Ω	7,83 A	29,4 Ω
11 mΩ	6,1 kWh	6,7 Ω	4,0*10 <sup>19</sup>	0,26 Ω	8,8*10 <sup>2</sup> Ω

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U = 230 V P = 60 W	U = 230 V P = 60 W	P = 1800 W t = 90 min	l = 50 cm Cu A = 8,0 mm <sup>2</sup>	t = 1,15 min I = 5,6 A	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 30 Ω R <sub>3</sub> = 15 Ω Parallel
<u>Current</u>	<u>Resistance</u>	<u>Energy</u>	<u>Resistance?</u>	<u>charge?</u>	<u>R<sub>tot</sub> = ?</u>
R <sub>1</sub> = 20 Ω R <sub>2</sub> = 60 Ω <u>R<sub>tot</sub> = 15 Ω</u> Parallel	R <sub>1</sub> = 20 Ω R <sub>2</sub> = 30 Ω R <sub>3</sub> = 15 Ω Series	R = 17 <u>mΩ</u> Cu A = 2,0 mm <sup>2</sup>	t = 2,3 min I = 2,8 A	U = 230 V P = 1800 W	U = 230 V P = 1800 W
<u>R<sub>3</sub> = ?</u>	<u>R<sub>tot</sub> = ?</u>	<u>length?</u>	<u>number of electrons?</u>	<u>Current</u>	<u>Resistance</u>

**Bereken de vetgedrukte variabele**

7,83 A	29,4 Ω	2,0 m	3,9*10 <sup>2</sup> C	60 Ω	65 Ω
0,26 Ω	8,8*10 <sup>2</sup> Ω	11 <u>mΩ</u>	6,1 kWh	6,7 Ω	4,0*10 <sup>19</sup>

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$R_1 = 20 \Omega$ $R_2 = 30 \Omega$ $R_3 = 15 \Omega$ Series  $R_{tot} = ?$	$R = 17 \text{ m}\Omega$ Cu $A = 2,0 \text{ mm}^2$  <b>length?</b>	$R_1 = 20 \Omega$ $R_2 = 60 \Omega$ $R_{tot} = 15 \Omega$ Parallel  $R_3 = ?$	$R_1 = 20 \Omega$ $R_2 = 30 \Omega$ $R_3 = 15 \Omega$ Parallel  $R_{tot} = ?$	$t = 2,3 \text{ min}$ $I = 2,8 \text{ A}$  <b>number of electrons?</b>	$U = 230 \text{ V}$ $P = 1800 \text{ W}$  <b>Current</b>
$U = 230 \text{ V}$ $P = 60 \text{ W}$  <b>Resistance</b>	$P = 1800 \text{ W}$ $t = 90 \text{ min}$  <b>Energy</b>	$l = 50 \text{ cm}$ Cu $A = 8,0 \text{ mm}^2$  <b>Resistance?</b>	$t = 1,15 \text{ min}$ $I = 5,6 \text{ A}$  <b>charge?</b>	$U = 230 \text{ V}$ $P = 60 \text{ W}$  <b>Current</b>	$U = 230 \text{ V}$ $P = 1800 \text{ W}$  <b>Resistance</b>

**Bereken de vetgedrukte variabele**

11 <u>mΩ</u>	2,0 m	0,26 Ω	7,83 A	6,7 Ω	60 Ω
$3,9 \cdot 10^2 \text{ C}$	6,1 kWh	29,4 Ω	$8,8 \cdot 10^2 \Omega$	65 Ω	$4,0 \cdot 10^{19}$

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$R_1 = 20 \Omega$ $R_2 = 60 \Omega$ $R_{tot} = 15 \Omega$ Parallel  <b><math>R_3 = ?</math></b>	$U = 230 V$ $P = 60 W$  <b>Resistance</b>	$t = 1,15 \text{ min}$ $I = 5,6 A$  <b>charge?</b>	$R = 17 \text{ m}\Omega$ Cu $A = 2,0 \text{ mm}^2$  <b>length?</b>	$P = 1800 W$ $t = 90 \text{ min}$  <b>Energy</b>	$t = 2,3 \text{ min}$ $I = 2,8 A$  <b>number of electrons?</b>
$U = 230 V$ $P = 1800 W$  <b>Current</b>	$l = 50 \text{ cm}$ Cu $A = 8,0 \text{ mm}^2$  <b>Resistance?</b>	$U = 230 V$ $P = 1800 W$  <b>Resistance</b>	$R_1 = 20 \Omega$ $R_2 = 30 \Omega$ $R_3 = 15 \Omega$ Series  <b><math>R_{tot} = ?</math></b>	$R_1 = 20 \Omega$ $R_2 = 30 \Omega$ $R_3 = 15 \Omega$ Parallel  <b><math>R_{tot} = ?</math></b>	$U = 230 V$ $P = 60 W$  <b>Current</b>

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Bereken de vetgedrukte variabele

$3,9 \cdot 10^2 C$	6,1 kWh	65 $\Omega$	$4,0 \cdot 10^{19}$	29,4 $\Omega$	$8,8 \cdot 10^2 \Omega$
11 <u><math>m\Omega</math></u>	2,0 m	6,7 $\Omega$	60 $\Omega$	0,26 $\Omega$	7,83 A

$R = 17 \text{ m}\Omega$ Cu $A = 2,0 \text{ mm}^2$  <u>length?</u>	$R_1 = 20 \Omega$ $R_2 = 30 \Omega$ $R_3 = 15 \Omega$ Parallel  <u><math>R_{\text{tot}} = ?</math></u>	$t = 2,3 \text{ min}$ $I = 2,8 \text{ A}$  <u>number of electrons?</u>	$l = 50 \text{ cm}$ Cu $A = 8,0 \text{ mm}^2$  <u>Resistance?</u>	$R_1 = 20 \Omega$ $R_2 = 30 \Omega$ $R_3 = 15 \Omega$ Series  <u><math>R_{\text{tot}} = ?</math></u>	$U = 230 \text{ V}$ $P = 60 \text{ W}$  <u>Current</u>
$P = 1800 \text{ W}$ $t = 90 \text{ min}$  <u>Energy</u>	$U = 230 \text{ V}$ $P = 1800 \text{ W}$  <u>Resistance</u>	$U = 230 \text{ V}$ $P = 60 \text{ W}$  <u>Resistance</u>	$R_1 = 20 \Omega$ $R_2 = 60 \Omega$ <u><math>R_{\text{tot}} = 15 \Omega</math></u> Parallel  <u><math>R_3 = ?</math></u>	$t = 1,15 \text{ min}$ $I = 5,6 \text{ A}$  <u>charge?</u>	$U = 230 \text{ V}$ $P = 1800 \text{ W}$  <u>Current</u>

Bereken de vetgedrukte variabele

11 <u>mΩ</u>	2,0 m	0,26 Ω	7,83 A	6,7 Ω	60 Ω
$3,9 \cdot 10^2 \text{ C}$	6,1 kWh	29,4 Ω	$8,8 \cdot 10^2 \Omega$	65 Ω	$4,0 \cdot 10^{19}$

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