

Progress Test Lesson 1 to 4 - Answers

Q 1 Complete the tables below.

Voltage (E)	Current (I)	Resistance (R)	Power
12 V	1 mA	12 KΩ	12 mW
120 V	17.1 mA	7 K Ω	2.05 W
14.4 V	0.707 A	20 Ω	10 W
16.66 V	6 A	2.77 Ω	100 W
60 V	60 mA	1 K Ω	3.6 W

Q2 Is a pico farad larger in number than a nanofarad? Explain your answer.
Pico 10^{-12} and nano 10^{-9} So Pico smaller

Q3 What is electrical energy as opposed to electrical power?
Electrical energy, opposed to electrical power, is generated by central power stations and is usually provided for public consumption through a grid system.

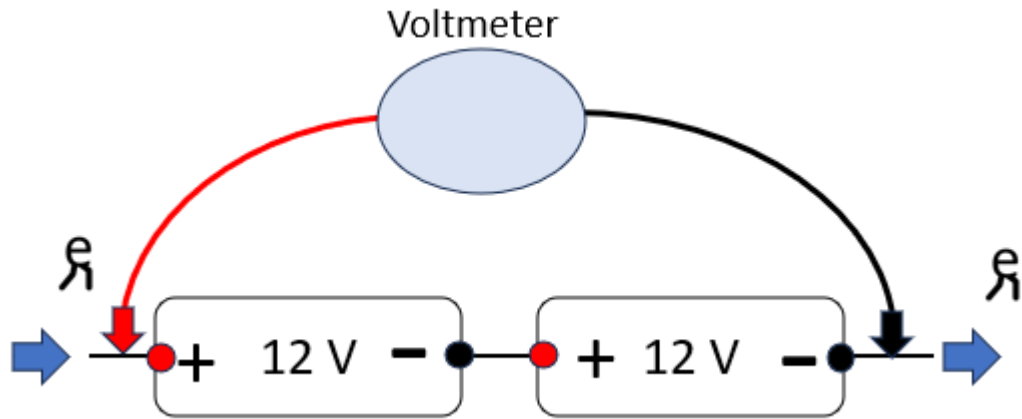
Electrical energy is measured in the unit kilowatt-hour (kWh). One kilowatt of power for one hour and this is the common billing unit for electrical energy.

Q4 What is the voltage in a circuit if the energy is 7 Joules and the charge is 10 Coulombs?
0.7 V

Q5 What current is flowing in a circuit if 10 Q passes a point in 5 seconds?
2 A

Q6 Describe the difference between conventional current flow and electron flow.
**Conventional current old theory positive to negative
Electron flow is real negative to positive.**

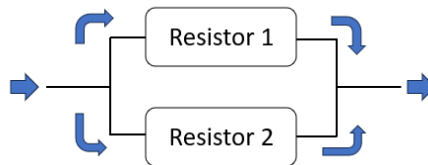
Q7 What power is dissipated in a circuit if 20 joules are expended in 5 seconds?
4W



Q8 What is the voltage on the voltmeter?

24 V

Q9 If resistor 1 is 150 ohms and resistor 2 is 570 ohms, what is the total resistance?



118.75 Ω

Q10 What are the colour bands for a 330 ohm resistor with 5% tolerance?

Orange Orange Brown Gold

A mnemonic to remember these numbers is,

Better Be Ready Or Your Great Big Venture Goes West.

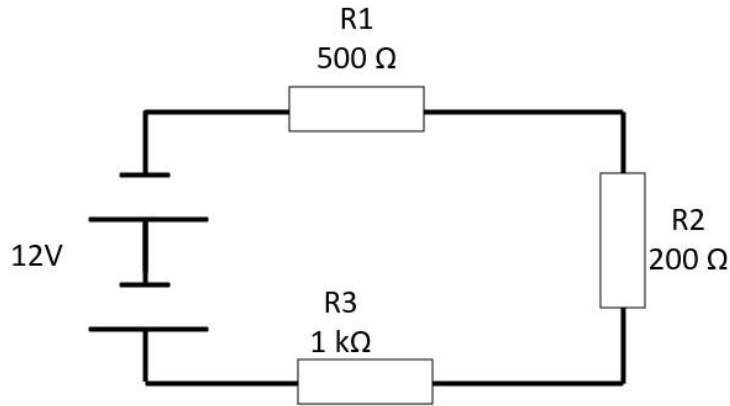
Black Brown Red Orange Yellow Green Blue Violet Grey White

Or

Big, Beautiful Roses Occupy Your Gardens, But Violets Grow Wild.

Black, Brown Red Orange Yellow Green Blue Violet Grey White

Q11 Complete the table for the figure below.



I	V R1	V R2	V R3	V R1 + R2 + R3
7 mA	3.5 V	1.41 V	7.05 V	12 V

Q12 If a resistor is rated at $\frac{1}{4}$ W, what does this mean?

The resistor can only dissipate quarter of a watt.

Q13 What is the resistance of a circuit with 2 A flowing and an EMF of 16 V?

8 ohms

Q14 Draw four resistors, 10 Ω 15 Ω 100 Ω and 90 Ω in series and calculate the total resistance.

215 ohms

Q15 Draw four resistors, 10 Ω 15 Ω 100 Ω and 90 Ω in parallel and calculate the total resistance.

5.33 ohms

