Formula Review

Name: Key

1. A negative charge of -4×10^{-7} C and a positive charge of 7×10^{-5} C are separated by 0.8 m. What is the force between the charges?

Formula:	Plug in numbers:	Answer with units:
$F = \frac{kq_1q_2}{d^2}$	$\frac{(9\times10^9)(-4\times10^{-7})(7\times10^{-5})}{.8^2}$	$-.39\,N$

2. A flashlight uses a standard 3 V battery. How much resistance is in the circuit if it uses a current of 0.04 A?

Formula:	Plug in numbers:	Answer with units:
$V = IR$	$\frac{3V}{.04} = \frac{0.04_A\,(R)}{.04}$	$75\,\Omega$

3. What current flows through a hair dryer plugged into a 123 Volt circuit if it has a resistance of 21 ohms?

Formula:	Plug in numbers:	Answer with units:
$V = IR$	$\frac{123V}{21} = \frac{(I)(21\Omega)}{21}$	$5.86\,A$

4. A light bulb has a resistance of 15 ohms and a maximum current of 23 A. How much voltage can be applied before the bulb will break?

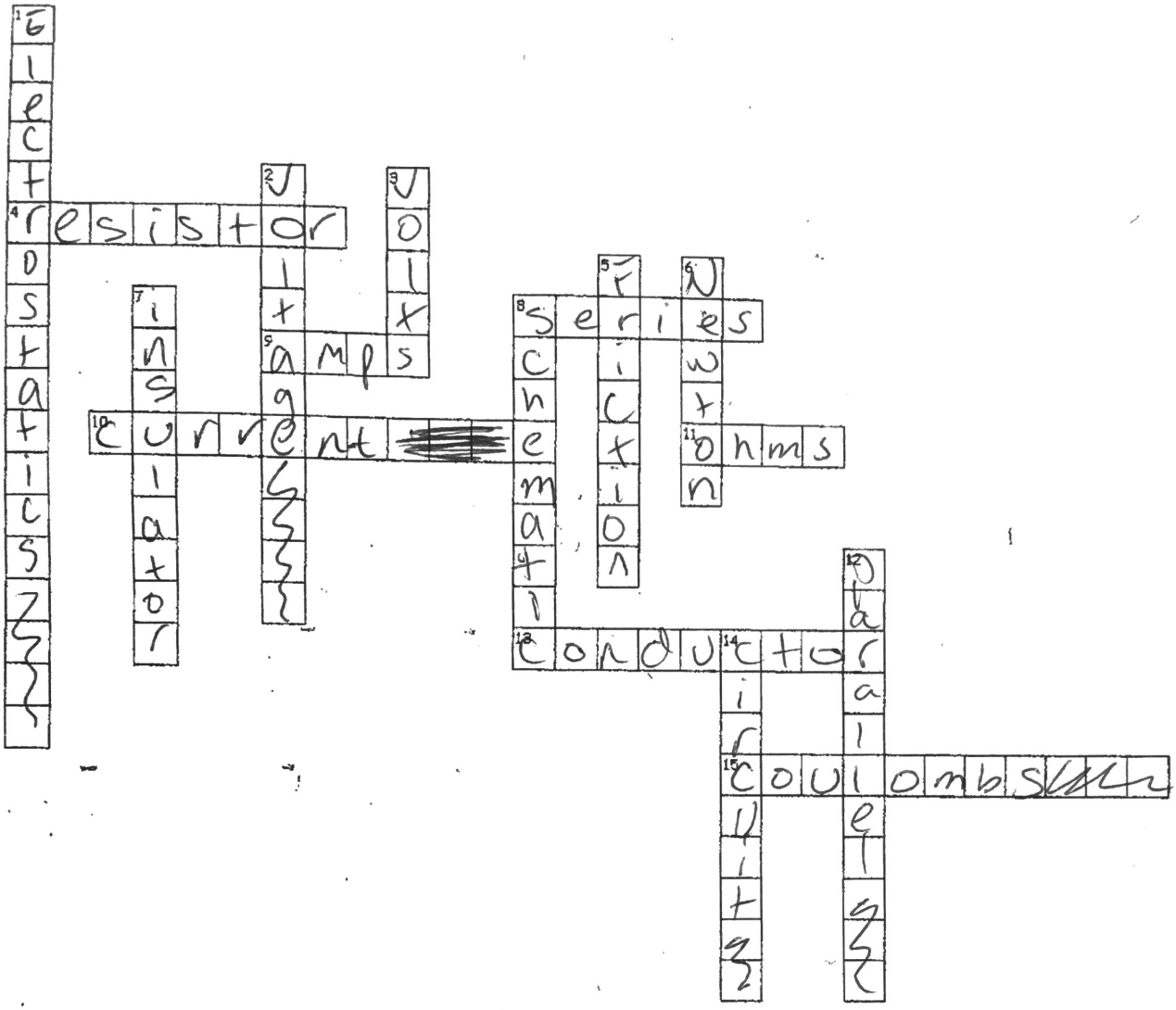
Formula:	Plug in numbers:	Answer with units:
$V = IR$	$V = (23\,A)(15\,\Omega)$	345 V

5. In a series circuit, a 9 V battery is connected to three resistors: 6 Ω. 13 Ω, and 20 Ω. What is the total resistance?

Formula:	Plug in numbers:	Answer with units:
$R_T = R_1 + R_2 + R_3$	$6\Omega + 13\Omega + 20\Omega$	39Ω

6. In a parallel circuit, a 9 V battery is connected to three resistors: 4Ω, 13Ω and 27Ω. What is the total resistance?

Formula:	Plug in numbers:	Answer with units:
$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$	$\frac{1}{4} + \frac{1}{13} + \frac{1}{27}$	2.7Ω



Across
4. Something that slows the movement of electric charge and reduces the current resistor
8. A circuit in which the current only has one path to travel series
9. The unit for current Amps
10. movement of an electric charge across a conductor current
11. The unit for resistance ohms
13. A material that charged particles can travel through conductor
15. unit for charge is a _____ coulomb

Down
1. study of electric charges, forces and fields electrostatics
2. amount of potential energy between two points voltage
3. The unit for voltage Volts
5. When a conductor and an insulator are rubbed together and the insulator holds electrons in place and becomes negatively charged Friction
6. The unit for force Newtons
7. A material that charged particles cannot travel through insulator
8. A diagram used to analyze electrical circuits schematic
12. circuit in which a current has more than one path to take is a ____ circuit parallel
14. path in which a current is conducted circuit

ds were placed into the puzzle.