

Worksheet C - Electromagnetism Review

NAME: _____ DATE: _____

1. The equation for Ohm's Law is $V = IR$. Define the three variables and provide the unit symbol used for each.
2. If R is held constant but V is increased, does I increase or decrease? Is this an inverse or a direct relationship?
3. If V is held constant but R is increased, does I increase or decrease? Is this an inverse or a direct relationship?
4. On the back of this sheet of paper, draw a simple diagram of an electric motor. Label the parts: coil, magnet, terminal wire ends, and draw arrows to show the direction of electron flow through the system.
5. A dynamo converts mechanical energy into electrical energy. Explain mechanical energy.
6. Batteries are not dynamos. Why not?
7. Magnets have poles (typically called "north" and "south" like the magnetic poles of the Earth). If you have two magnets, which ends are going to want to attract each other and which ends will push each other apart?
8. When we made our electric motors back in November, we coiled copper wire around in loops. Why does this help?
9. Now instead of using those hand-made electric motors, we're using pre-built motors. These are a lot harder to spin. Why?
10. When you calculate the mechanical advantage of a simple machine (like the wheel and axle of your dynamo), what two forces are involved? Do you multiply them or divide them to determine mechanical advantage?