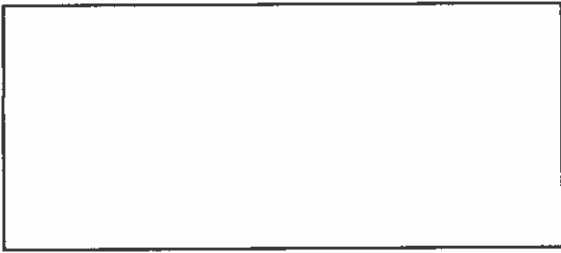


ELECTRIC POWER

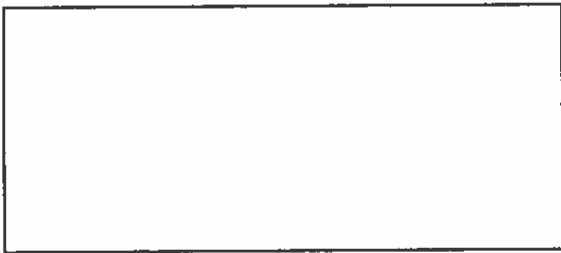
- Electric power is the rate at which energy is converted from electric energy of the moving charges to some other form of energy such as heat, mechanical energy, or energy stored in the electric field.



Units: \_\_\_\_\_

Symbol: \_\_\_\_\_

**POWER DISSIPATED** in a resistor is directly proportional to the resistance of the resistor and to the square of the electric current

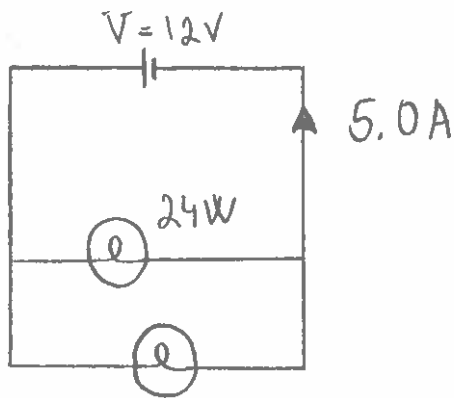


- ❖ It is always efficient to transmit through transmission lines at high voltage and low current

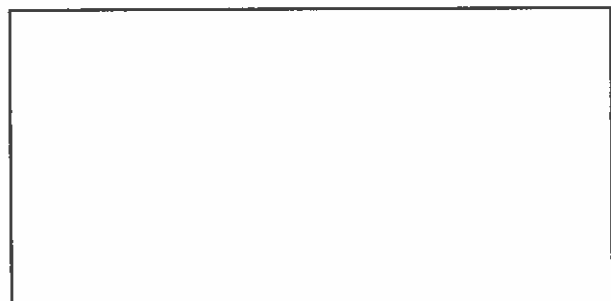
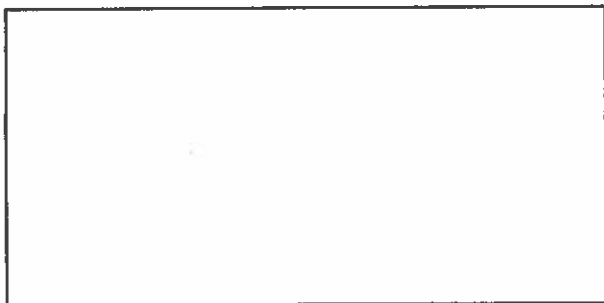
Example 1: How much power dissipates in a current of 2.4A with a resistor of 3 Ohms?

Example 2: Consider a current of 0.5A through a lamp for 2 minutes, with potential difference of 120V. How much energy does the current transfers to the lamp?

Example 3: A 12V battery supplies a 5.0A current to two light bulbs as shown below. The power of one of the light bulbs is 24 W. What is the power output of the other bulb?



## Efficiency



- **Efficiency is the RATIO of work/energy developed/done by a machine or device and the work/energy supplied to the machine or device.**

Example 1: What is the useful light output from a bulb of efficiency of 25% when supplied with 600 J of energy?