

## Student Worksheet

**COST OF POWER - KILOWATT·HOUR:** The Kilowatt·hour is another way of expressing the amount of energy used. For example, if a 300 W TV is used for 2 hours, the amount of energy in Kilowatt·hours can be found by multiplying Kilowatts by hours as shown below.

$$300 \text{ W} = 0.300 \text{ KW (divide by 1000 to get KW)}$$
$$(0.300 \text{ KW})(2 \text{ hours}) = 0.6 \text{ KW·hr}$$

**Find the energy (KW·hr) required for the following:**

- 1) A 1200 Watt heater is used for 4 hours.

- 2) A 2000 Watt oven is used for 3 hours.

- 3) An electric car uses 15 KW for 2 hours.

**THE COST FOR ELECTRICITY** is measured in terms of Kilowatt·hours (KW·hr). The average price per KW·hr is about \$0.13. The cost for electricity can be found as follows:

$$\text{Cost of Electricity} = (\text{Number of KW·hr})(\$0.13/\text{KW·hr})$$

**Find the cost for each of the following appliances.** We'll use the same cost for electricity of \$0.13/KW·hr.

- 1) A 1200 Watt heater is used for 4 hours.

- 2) A 2000 Watt oven is used for 3 hours.

- 3) An electric car uses 15 KW for 2 hours.



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### COST OF POWER PROBLEMS

For the following problems you can assume that the cost for electricity is \$0.13 /KW·hr.

**Find the energy (KW·hr) required for the following:**

- 1) A water heater with a power rating of 3600 W heats water for 8 hours. Determine the cost for electricity.



- 2) A laptop (100 W) is used for 2 hours a day for 30 days. Determine the cost for electricity.



- 3) A cell phone charger (6W) charges a cell phone overnight for 10 hours. Determine the cost for electricity.



- 4) A lightbulb (60 W) is left on for 30 days straight. Determine the cost for electricity.



- 5) An electric car (15,000 W) is driven for 3 hours. The cost for electricity at charging stations is \$0.40/KW·hr. Determine the cost for electricity.

