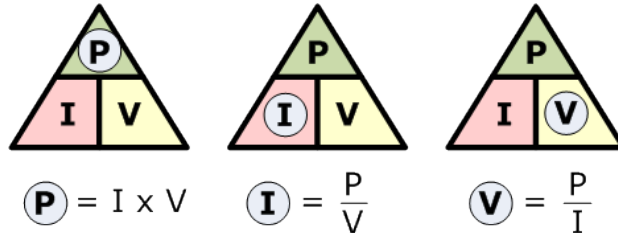


Power Calculations & Energy Costs

Name: _____ Date: _____

POWER



1. A current of 13.6 A passes through an electric baseboard heater when it is connected to a 110 V wall outlet. What is the power of the heater?

2. A 120 V wall outlet is connected to a hair dryer with a power of 1600 W. What is the current passing through the hair dryer?

3. An electrical appliance draws 1.2 A of current and has a power rating of 200 W. Calculate the voltage.

4. Convert the following powers into kilowatts. *Simply divide by 1000 and write kW afterwards.*
 - a) 3000 W _____
 - b) 20 W _____
 - c) 900 W _____
 - d) 20 000 W _____
 - e) 1 W _____

Look at the following table to answer the questions below.

Electrical Appliance	Average Kilowatts Used Per Year
Air conditioner	860
Blanket	150
Can opener	0.5
Clock	18
Clothes dryer	995
Clothes washer	100
Coffee maker	140
Dishwasher	365
Cooling fan	295
Hair dryer	25

Electrical Appliance	Average Kilowatts Used Per Year
Iron	60
Fluorescent lights	270
Mixer	2
Stereo player	110
Radio	90
Refrigerator	2200
TV (black and white)	100
TV (colour)	325
Toaster	40
Vacuum cleaner	50

5. What three appliances use the most kilowatt-hours in a year?

Energy and Cost Calculations

ENERGY

DEFINITION	SYMBOL	UNIT	EQUATION

Remember: When calculating energy transferred, **POWER MUST be in kW** and **TIME MUST be in hours!**

Sample Problem:

Calculate the energy transferred by a computer with a power of 2000W which is left on for 3 hours.

COST TO OPERATE APPLIANCES

DEFINITION	SYMBOL	VALUE	EQUATION

Remember: When calculating cost, your answer must be in dollars and not cents.

Sample Problem:

Will has an electric lawn mower which has a power rating of 5 kilowatts. Bob takes 2 hours to mow his lawn. How much will it cost him if each kWh of energy costs \$0.15?

Questions:

1. Find the energy used in kWh if you leave a portable electric heater (1500W) for 6 hours.

2. If you consume 350 kWh and the electricity rate is \$0.08 per kWh, what is the cost?

3. If a family does 18 loads of laundry in an 1400W Electric Dryer per month, and the clothes take 30 minutes to dry, what is the cost?

4. What is the maximum cost at \$0.12 per kWh of running a 2500W central air conditioning unit for 6 hours per day for July and August?

5. You get your hydro bill and it says that it cost you \$12.00 to run your 3000W electric generator at a cost of \$0.10 per kWh. How many hours did it run for?