

Electrical Power and Energy Worksheet

1) An 8.0 A current flows through a light bulb connected to a 6.0 V battery.

a. What is the power of this bulb?

b. How much energy will be used in 30 seconds?

2) A 600 W electric heater is connected to a 120 V outlet.

a. What is the current that flows through the heater?

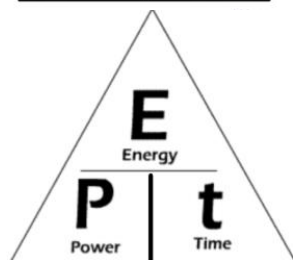
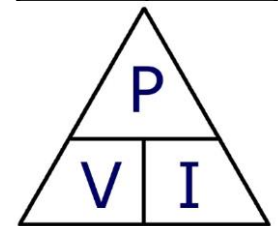
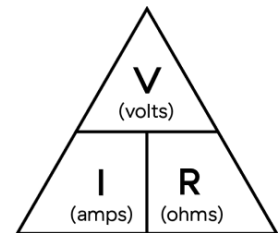
b. What is the total resistance of the heater?

3) How long can a 150 W water heater run using 9000 J of energy? Answer in minutes. (remember, the formula gives you seconds!)

4) A 24 V battery is applied to a circuit with an electric razor. The resulting current is 625 mA.

a. What is the power of the electric razor?

b. If the razor is used for 7 minutes, how many joules of energy are used by the razor? (**remember, the formula uses seconds!**)



5) A 2.5 A current flows through an 80 W lamp.

a. What is the voltage across the lamp?

b. What is the resistance of the lamp?

6) A 300 W fax machine is plugged into a 240 V outlet. What is the resistance of the fax machine?

7) a) 42 000 J of energy can be used to run a microwave for 30 seconds. What is the power of the microwave?

b) The microwave has a current of 7 A. What is the resistance of the microwave?

8) An electric company charges \$ 0.10 per kWh of energy. How much would running an appliance that uses 3 kWh of energy cost?