

Energy & Power Review

Homework

In the table, enter different forms of energy that your family uses **per day**. Please ask your parents to help with gathering the data. You will need to analyze electricity & heating bill, check with your parents how much gas they normally use for transportation. For food, assume 2000 Cal diet for each family member. All numbers may be approximate. The Energy must be in Mega-Joules (MJ). I list all necessary conversion factors below.

	food	car	electricity	heating
Usage per day, various units	Cal	Gallons of gas	kWh	therms
Usage per day, MJ				

$$1\text{Cal}=1000\text{cal}=4184\text{ J}$$

$$1\text{ kWh (kilowatt*hour)}=(1000\text{W}) * (3600\text{s})=3.6\text{MJ}$$

$$1\text{ gallon of gasoline when burned gives }132\text{MJ}$$

$$1\text{ therm}= 105\text{ MJ.}$$

Therms are normally shown in the bill if you use natural gas for heating. If you use heating oil, convert gallons to MJ (in the same way as for car).