Example 13:
1 milliliter of ink can print 50 pages of text. If you had 10 gallons of ink then how many pages could you print?
Given: 1 gallon = 3.79 liters

Example 14:
The new kid in school has been heard bragging that he can bench press 145,000 grams.
If 1kg = 2.2 pounds, should you be impressed? Convert to pounds to find out.

Example 15:
Determine the amount of BTU's needed to heat 1,000 square feet of space in a home.
Given: 80,000 BTUs of heat are needed to heat one square foot

Example 16:
You find 1×10^3 pennies in the cushions of your couch. If each penny weighs 4 grams, how much did all that loot weigh in lbs.? (2.2 lbs = 1 Kilogram)

Example 17:
You decide that you want to heat your attached 2½ car garage/workout area during the winter. You saved a bunch of money on gas by purchasing a hybrid car the previous year, so you have enough money to extend your present heating ducts into the garage. You just want to make sure that the cost of heating the garage doesn't exceed your monthly budget. The garage area is 500 sq. ft. Your house is heated by natural gas, which has a current price of $15.00 per 1000 cubic feet. You already know that one square foot requires 80,000 BTUs of heat energy to cover the winter season. You also know that 1 cubic foot of natural gas supplies 1000 BTUs of heat energy. (Even though no such system exists, assume that this heating system is 100% efficient)

(a) Calculate number of cubic feet of natural gas required to heat the garage for the winter.
Show all the steps of your calculations, including units.

(b) Calculate the cost of heating the garage area for the winter.

Example 18:
Every three times I clean my room, my mom makes me an apple pie.
I cleaned my bedroom nine times. How many apple pies does she owe me?

Example 19:
A Syosset High School senior was applying to college and wondered how many applications she needed to send. Her counselor explained that with the excellent grade she received in her APES class, she would probably be accepted to one school out of every three to which she applied. (3 applications = 1 acceptance). She realized that for each application, she would have to write 3 essays (1 application = 3 essays), and each essay would require 2 hours worth of work (1 essay = 2 hours). As we know, writing essays is no simple matter. For each hour of serious essay writing, she would need to expend 500 calories (1 hour = 500 calories), which she could obtain by eating her mom's apple pies
(1 pie = 1000 calories). How many times would she have to clean her room in order to be accepted at 10 colleges? (Don't forget to refer back to Problem #18..).

Example 20:
Refrigeration is costly in terms of energy usage. A single-door, manual defrost refrigerator uses 600 kWh/yr.
A large, 20 cu.ft. two-door automatic defrost refrigerator uses 1880 kWh/yr.
How many kcal/yr does each type of refrigerator use? (1kWh = 860kcal)

Example 21:
Transportation energy can be costly.

Calculate the cost of gas use just for going to the supermarket in one year if you take 5 trips to the store per week, traveling 7.5 miles roundtrip, and your car gets 22 miles per gallon. The price of gasoline is $2.09/gallon.

Example 22:
Assume you use an air conditioner for a total of 137 days, 24 hours per day, at a rate of 7.25 kWh per hour. Assume the cost per kWh is the New York rate of $0.21/kWh and 1 kWh = 3400 BTUs.

(a) Calculate the total number of kWh used in a typical year.

(b) Determine the cost of air conditioning for one year.

(c) How many BTUs are used in one year?

Example 23:
A large, coal-fired electric power plant produces 12 million kilowatt-hours of electricity each day. Assume that an input of 10,000 BTUs of heat is required to produce an output of 1 kWh of electricity.

(a) Calculate the number of BTUs of heat needed to generate the electricity produced by the power plant each day.

(b) Calculate the number of pounds of coal consumed by the power plant each day, assuming that one pound of coal yields 5,000 BTUs of heat.

(c) Calculate the number of pounds of sulfur released by the power plant each day, assuming that the coal contains one percent sulfur by weight.