Name: _____

ET142 Electrical Problems Pt2

Problem

1. James' three front porch lights are on a timer and come on @ 8pm and go off @ 7 am. If the bulbs are 75w ea., how many watt hours does this use equal per day? Per 30 day month? Per year?

2. If the power to operate the bulbs (above) cost .14 per kWh, how much will it cost per day, per month, per year?

3. Martha made a list of her daily electricity use for her house in Hawaii. How much will her total kWh consumption per year cost @ 10 cents per kWh? (figure 30.5 days per month)

T.V.	3 hours per day @ 250 watts
Microwave	7 hours per week @ 1500 watts
Crock Pot	3 hours per month @ 125 watts
Washer	2 hours per week @ 850 watts
9 light fixtures	8 hours per day @100 watts ea.
porch light	12 hours per day @ 75 watts
refrigerator	24 hours per day @ 275 watts
Window A/C	8 hours per day @ 550 watts
misc.	24 hours per day @ 25 watts

4. Old central air systems are not energy efficient. Low performance ratings, un-insulated or under insulated duct work, and bad energy use habits make these systems one of the biggest contributors to green house gas emissions. Many of these systems are installed in older poorly insulted homes. To cool the residence effectively during hot weather months they must be on 24 - 7 from June 1st. to Sept 30th. (24 hours per day, 7 days per week). The average for the balance of the year is 4 hours per day.

   To dramatize this situation, solve the following problem:

   Unit Specs: 30 amps @ 240 volts

   > how many watts ?
   > how many kilowatt hours per year?
   > @ .14 per kWh, how much will it cost to operate the system for the year