**Calculating Energy Usage and Efficiency**

Use the information given along with basic conversion factors to solve each problem. SHOW ALL WORK *including units.* **NO CALCULATOR MAY BE USED.**

1. A family installs one 25-watt CFL in their kitchen. It gives off as much light as a 100-watt incandescent bulb. They use the light for 5 hours every evening. The average cost of each kilowatt hour of electricity is $0.12.
2. Calculate how many kilowatt hours the 25-watt CFL uses in 5 hours.
3. Calculate how many kilowatt hours the 100-watt incandescent bulb uses in 5 hours.
4. How much energy is saved by replacing the incandescent bulb with the CFL?
5. How much does it cost to use the CFL for 5 hours?
6. How much does it cost to use the incandescent bulb for 5 hours?
7. What is the difference in cost when 1 incandescent lightbulb is replaced by 1 CFL?
8. How much money can be saved in 1 year?
9. A standard clothes washer uses 2 kwh per load of laundry. An ENERGY STAR labeled clothes washer uses 1 kWh per load of laundry. A typical family washes 390 loads of laundry a year. The average cost of each kilowatt hour of electricity is $0.12.
10. Calculate how many kilowatt hours the standard washer uses in 1 year.
11. Calculate how many kilowatt hours the ENERGY STAR washer uses in 1 year.
12. How much energy is saved by using the ENERGY STAR washer?
13. How much does it cost to use the standard washer for 1 year?
14. How much does it cost to use the Energy Star washer for 1 year?
15. How much money can be saved in one year when the standard washer is replaced by the ENERGY STAR washer?
16. A standard television set uses 75 watts per hour when it’s turned on and 6 watts per hour when it’s turned off. An ENERGY STAR television set uses 70 watts per hour when turned on and 2 watts when turned off. A typical family watches 6 hours of television per day. The average cost of each kilowatt hour of electricity is $0.12.
17. Calculate how many kilowatt hours the standard television uses in one day (time on AND time off).
18. Calculate how many kilowatt hours the ENERGY STAR television uses in one day (time on AND time off).
19. How much energy is saved by replacing the standard television with the ENERGY STAR television?
20. How much does it cost to use the standard television for one day (time on AND time off).
21. How much does it cost to use the ENERGY STAR television for one day (time on AND time off).
22. What is the difference in cost when the standard television is replaced by the ENERGY STAR television?
23. How much money can be saved in 1 year?

Using DATA from this assignment, compare AND contrast the terms *conservation* and *efficiency.*