Name _____ Hour _____

Electricity at Home Lab

Find meter DUE _____ Data DUE _____ Lab DUE _____

If you live in an apartment or don't have access to your electric meter, you will need to work with another student!

Whose house are you at? Student Name: _____

This activity will cost you less than $0.50. Thank you! Mrs. B.

How to read your Electric Box: (grey box on outside of house)

Analog electric meter:

Spinning disk

Kh value somewhere on your electric meter

Digital Electric Meter

Arrows or blocks that Light up

K_h=_____

1. What is the K_h value from your electric meter? (usually 1 or 7.2)
2. The K_h value is equal to the **work done** in **watt hours** during the time it takes to spin around 1 time.
3. If your K_h value was 3.6, how much work was done during the time it took to spin around one time?

4. Let's say that your electric meter has a K_h reading of 2 and it takes the disk 28 seconds to spin once. How much power did you use?

5. What would it cost you if those appliances were running for 24 hours?

Name _____ Hour _____

My Kh value is _____

P = W/Δt
P = I ΔV

Part 1- Cost of running one appliance-

1. Find 1 appliance (not a lightbulb) and find the Wattage:

   Watts_____ **=** _____ **kilowatt** Voltage = 120 V
2. Solve for how much **current** this appliance is using.

3. Time of operation for this appliance in a typical day: _____min= _____ **hr**

4. Cost per kWh *(from your electric bill)* ___$0.101____
5. Calculate the total cost to run this appliance for the time indicated in #3. Show your work!

Part 2- Calculate the power being used in your house at a given time.

A) With as few appliances running as possible- Turn OFF EVERYTHING1

6. How long does it takes for the disk to spin around once? (Digital- time for 1 arrow to change to another)
   _____ sec = _____ hr
7. **K_h reading** _____ *THIS IS YOUR **WORK***
8. Calculate the **power** being used in your house with only a few things running. (The K_h = **work** in Watt · hr, time needs to be in hours too)

P = W / Δt

B) With as many appliances running as possible- Turn ON EVERYTHING1

9. How long does it take for the disk to spin around once? (Digital- time for 1 arrow to change to another)
   _____ sec. = _____hr.

10. **K_h reading** _____ *THIS IS STILL YOUR **WORK***
11. Calculate the **power** being used in your house with lots of appliances running.

P = W / Δt

12. If you had all the appliances running at the power in #11 for 10 min, calculate the total cost of running that part of the lab.

13. Calculate how much it would cost to have all of those appliances running for 24 hours a day for **30 straight days**.