Name: _____

ESS32 Electrical Problems 4

Problem

1. James' four front porch lights are on a timer and come on @ 10pm and go off @ 6am. If the bulbs are 100w 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 .12 per kWh, how much will it cost per day, per month, per year?

3. If a 220Ohm lamp takes 0.75 amps from a voltage source, what is the voltage?

4. A soldering iron has a resistance of 200 Ohm when operating from a 220V source. How much current does it take from the source?

5. The service voltage to commercial customers in the US is ~ 208VAC. If the service equipment can carry a maximum safe current of 100A, what is the total load resistance of the residence?

6. A 12V battery powers a rear window defroster whosee resistance is 200Ohm. How much current flows in the circuit?

7. What is the maximum allowable current of a resistor marked 100Ohm and 12W

8. A transistor delivers 6.2W. If the current is 0.38A, what is the voltage across the circuit?

9. A light emitting diode will be visible if 2.5V is dropped across its terminals with a current flow of 0.02A. How much power is consumed by the device?

10. What is the internal resistance of a 75W incandecent light bulb operating at 120V?

11. How much power is dissipated across a 200Ohm resistor subjected to 3A of current?

12. A 48V source is connected across a 100Ohm resistor. How much energy is used in two minutes?