

hhh.schaums.27.11_27.15

Homework: Chapter 27 (Electric Power) 27: 11, 12, 13, 14, 15

Recall that power is also equal to *work or energy divided by time* or *Force times velocity*
In terms of electricity power equals

$P = I \cdot V$ (Use when determining the entire power of a circuit)

$P = I^2 R$ (Use when determining the power loss across a resistor when you know the current through that resistor)

$P = \frac{V^2}{R}$ (Use when determining the power loss across a resistor when you know the voltage drop across that individual resistor)

Power is measured in Watts W

Recall that current is measured in amps and given the symbol I

Power that you calculate is often the power that is lost through a resistor as heat Q.

27.11 Use $P = VI$

27.12 Use one of the above formulas

27.13 MV means mega volt or 1,000,000 volts

Recall that energy is equal to Vq where q is the charge. A watt•s is the same thing as a joule

27.14. 1.5 amps is equal to 1.5 coulomb per second.

Work is equal to energy which is equal to Vq . They just give the answer in kJ (1000 joules)

Power is equal to work divided by time or you can just multiply current times voltage

27.15 $P = IV$

Energy = Power x time (in seconds)

A kilowatt hour is the energy that a 1000 watt appliance uses in one hour. It is equal to 3,600,000 joules and is the unit the power company uses to charge you for electric energy. You can look up your power bill on the internet and see month by month what the power company charges per kWh

27.16 This is where you use $I^2 R$.