

II. Electric Power

Power - time rate of doing _____

$$(\text{watts}) P = W (\text{J}) / t (\text{seconds})$$

since $V = W/q$, CROSS MULTIPLY then $W =$ _____

SUBSTITUTE *** $P = V[q/t] =$ _____

All these equations are in the reference table

$$P = VI \text{ since } V = IR. \text{ THEN } P = \text{_____} \text{ since } I = V/R$$

$$\text{THEN } P = \text{_____}$$

Electric Energy and Heat

(W) Electric energy consumed or released as heat

All these equations are in the reference table

$$(J) W \text{ _____}$$

Power/Energy Questions

Ex) Series circuit w/ two lamps, the battery supplies a potential difference of 1.5 volts. The current in the circuit is 0.10 ampere, what rate does the circuit use energy?

Ex) In which kind of circuit would a $5.0\ \Omega$ resistor be brighter (more power) than a $10.\ \Omega$ resistor?

Hint: $P = V^2/R$ and $P = I^2R$

Ex) An electric iron operating at 120 volts draws 10. amperes of current. How much heat energy is delivered by the iron in 30. seconds?

What's wrong with this circuit?

