Power:

The rate at which energy is used or supplied.
Power is measured in Watts (W).

$$P = \frac{\text{Energy}}{\text{time}}$$

Recall $V = \frac{\text{Energy}}{\text{charge}}$ so Energy = VQ

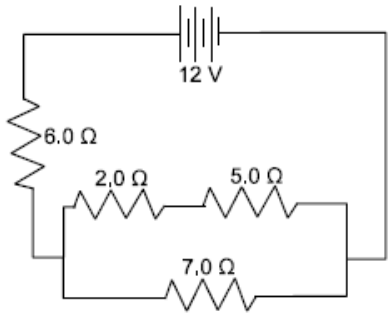
Isn't math great...because now we get...

$$P = \frac{VQ}{t} \quad \text{and} \quad P = VI$$

Can you math types turn this into ...?

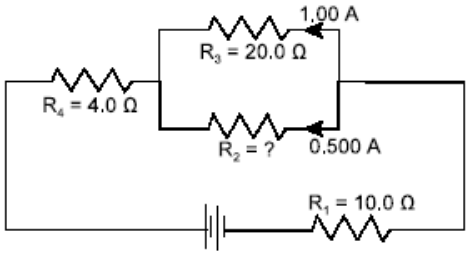
$$P = I^2R \quad \text{and} \quad P = \frac{V^2}{R}$$

52.(d) For the circuit shown in the diagram below, calculate:



(i) the voltage across the 6.0 Ohm resistor;
(ii) the current through the 5.0 Ohmresistor;
(iii) the power dissipated in the 2.0 Ohm resistor.

6% 52.(c) For the circuit below calculate:



i) the value of R .
ii) the power dissipated in R4
iii) the voltage across the source.

iv) Explain how the addition of another resistor in parallel will change the total resistance of the circuit.

Cost of Electrical Energy

We are charged for the energy we use and we use millions of Joules every day.

Since...

$$P = \frac{\text{Energy}}{\text{time}} \qquad \text{Energy} = P \times t$$

Since Joules are so small, Newfoundland Power charges for kilowatt-hours (kW-h). 1 kW-h = ? J

get 2014 rates

Rate: (Includes Municipal Tax and Rate Stabilization Adjustments)

Basic Customer Charge: .....$15.68 per month

Energy Charge:

All kilowatt-hours .....@ 11.171 ¢ per kWh

Minimum Monthly Charge .....$15.68 per month

How much would you be charged if you leave a 60W lightbulb on in your room while we are in Europe (days)?

How much do you pay to use your 1500W hairdryer for 15 minutes each day for one month?

Determine the cost to operate a kettle on a 120V line for 1800h during the life of the kettle. The resistance of the element in the kettle is 9.6 Ohms.

At a cost of 9.339 cents/kWh how much will your radio add to your light bill if it draws 150mA on a 120V line and you leave it on during your 2 week vacation?

The dimmer switch on your overhead light has a resistance of 95 Ohms and 500mA passing through it. How much do you pay to use it for 3 1/2 hours per day for one month (30 days)?

Chi Straightener

1300W