

#flo #inclass

1 | Ref it later #review

charging a battery is fundamentally shoving in current the wrong way
 direction of flow doesn't really matter, wrong way of current flow just flips to neg
 can walk in whatever loops on the rollercoaster

we need KBhPHYS201KirkoffsLaws

most engineers dont go back to the laws to solve a circuit. instead, they:

replace clusters of parrelles with one equivalent resistor "morph" the circuit

resistors in series -> one equivalent resistor one resistor in circuit

$v=ir$

voltage = current * resistance

1.1 | howto: calculating equivalent resistors

connected in series: the sum of the individual resistances.

$R + R = 2R$

Two resistors connected in parallel: The reciprocal of the equivalent resistance of two resistances connected in parallel is the sum of the reciprocals of the individual resistances. what??

$1 / R_{eq} = 1 / R_1 + 1 / R_2 + 1 / R_3$

just add the reciprocals to get the INVERSE of Req

1.1.1 |problem:

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      |--20--|
*--10--      --*
      |--60--|
  
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$1/20 + 1/60 = 4/60 = 1/r_2$ flip, $60/4 = 15$

$15 + 10 = 25 \Omega$

* -- {9v} -- 10 -- [20, 30] -- [40, 50] -- *

R#	R	dV	I	P
1	10	2.03	.203	0.41
2	20	2.44	.122	0.29
3	30	2.44	.081	0.19
4	40	4.53	.113	0.51
5	50	4.53	.090	0.41

summing up parallel: 10, 12, 22 ohm sum = 44 ohm $9V/44\Omega = 0.203A$ coming out of bat

$$1/10000 + 1/3300 + 1/1000$$

$$470 +$$

$$= 1183$$

1.2 | power:

$P = IV$ In Watts energy per second

add the resistors
do the sudoku
fill out the table