6 physics individual task:

Edited at 6am 6 August 2017.

s is your student number. k = s mod 10000. T = s mod 100. m = s mod 35. a = s mod 25.

L = s mod 10. $d\_{2}=\frac{T-L}{10}$. e = s mod 8. m7 = s mod 7. m6 = s mod 6. m5 = s mod 5. m4 = s mod 4.

m3 = s mod 3. m2 = s mod 2. u = s + 10000.

Electric circuits:

1. Show that maximum power losses in a circuit when internal and external resistances are equal.

Prove the maximum.

E is electromotive force = e.m.f.

I is current.

R is external resistance.

r is internal resistance.

V is Voltage.

P is Power lost in the circuit.

E and r are constants.

R is the variable.

E = I(R + r).

V = IR.

P = IV = RI2.

Maximize P depending on R.

$$I= \frac{E}{R+r}$$

$$P=\frac{RE^{2}}{\left(R+r\right)^{2}}$$

E = e + 1.

r = m7 + 1.

http://farside.ph.utexas.edu/teaching/302l/lectures/node62.html

http://www.electronics-tutorials.ws/dccircuits/dcp\_9.html

Previous tasks:

2. Improve your answers to all individual tasks and revision papers, and resubmit them.

What you have learned:

3. What have you learned in my physics class?

Project:

4. Improve your project.

Deadline: as soon as possible.