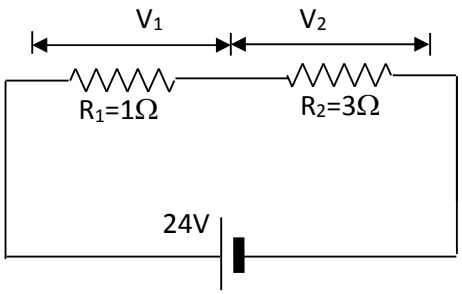
Name: _____ Sec: _____

PHY 232 Fall 2017 Class Work and Supplementary Work (Not to be collected)

Class 22. Resistors in series and parallel

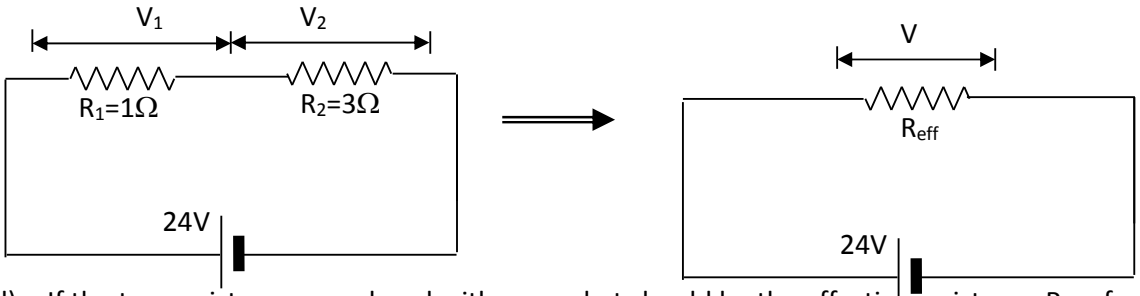
Part 1.



(a) What is the current through R_1? What is the current through R_2?

(b) What is the voltage V_1 across R_1? What is the voltage V_2 across R_2?

(c) What is the power dissipated in R_1? What is the power dissipated in R_2?



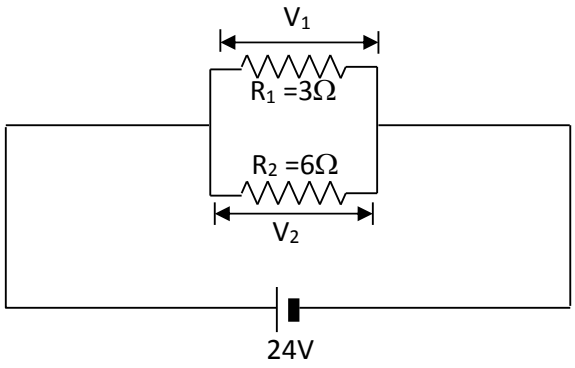
(d) If the two resistors are replaced with one, what should be the effective resistance R_{eff} of the replacement?

(e) What is the current through R_{eff}? How is this answer compared with that of part (a)?

(f) What is the voltage across R_{eff}? How is this answer compared with that of part (b)?

(g) What is the power dissipated R_{eff}? How is this answer compared with that of part (c)?

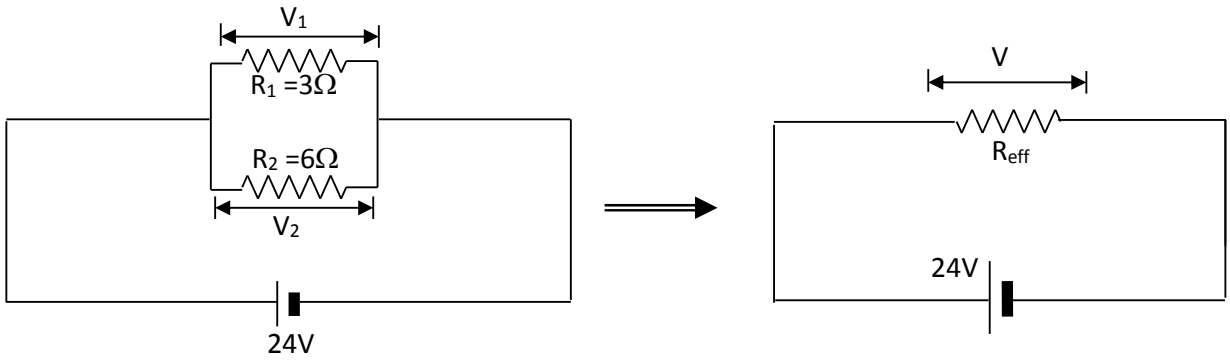
Part 2.



(a) What is the current through R_1? What is the current through R_2?

(b) What is the voltage V_1 across R_1? What is the voltage V_2 across R_2?

(c) What is the power dissipated in R_1? What is the power dissipated in R_2?



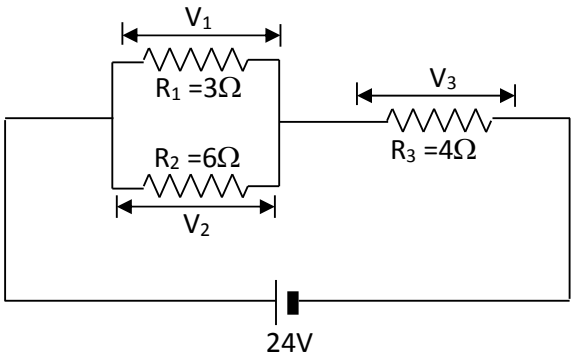
(d) If the two resistors are replaced with one, what should be the effective resistance R_{eff} of the replacement?

(e) What is the current through R_{eff}? How is this answer compared with that of part (a)?

(f) What is the voltage across R_{eff}? How is this answer compared with that of part (b)?

(g) What is the power dissipated R_{eff}? How is this answer compared with that of part (c)?

Part 3.



(a) What is the current through R_1? What is the current through R_2? What is the current through R_3 ?

(b) What is the voltage V_1 across R_1? What is the voltage V_2 across R_2? What is the voltage V_2 across R_3?

(c) What is the power dissipated R_1? What is the power dissipated R_2? What is the power dissipated R_3?