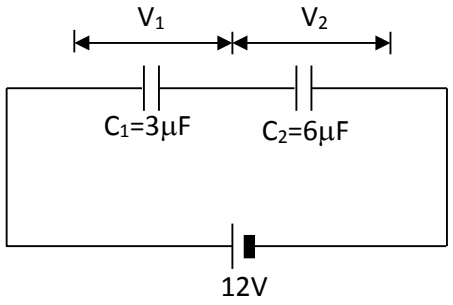
Name: _____ Sec: _____

PHY 232 Fall 2014 Supplementary Work (will not be collected)

Class 18. Capacitors in series and parallel

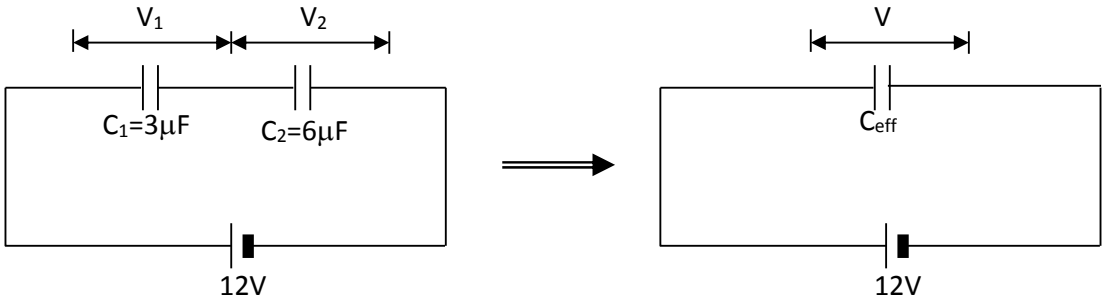
Part 1.



(a) What is the charge stored in C_1? What is the charge stored in C_2?

(b) What is the voltage V_1 across C_1? What is the voltage V_2 across C_2?

(c) What is the energy stored in C_1? What is the energy stored in C_2?



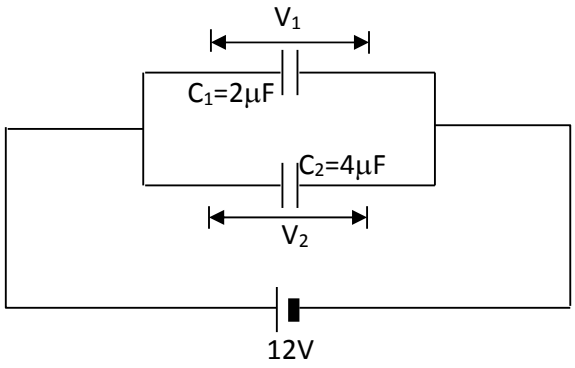
(d) If the two capacitors are replaced with one, what should be the effective capacitance C_{eff} of the replacement?

(e) What is the charge stored in C_{eff}? How is this answer compared with that of part (a)?

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

(g) What is the energy stored in C_{eff}? How is this answer compared with that of part (c)?

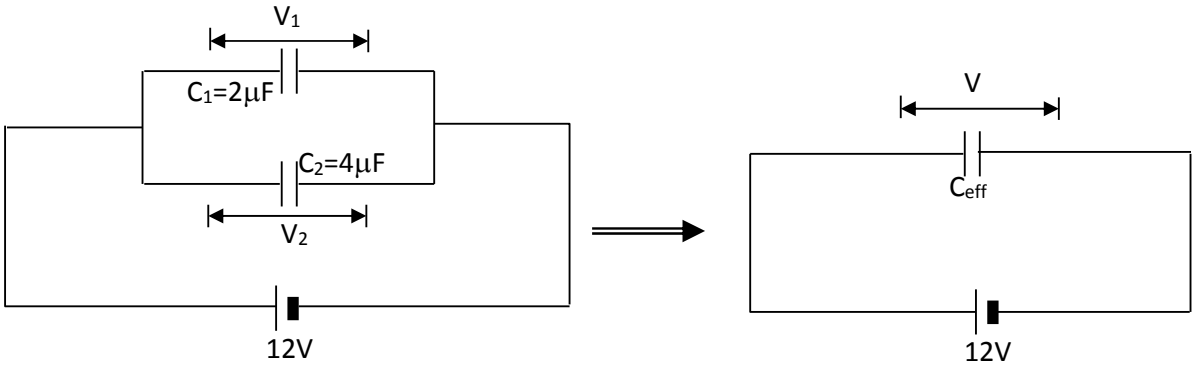
Part 2.



(a) What is the charge stored in C_1? What is the charge stored in C_2?

(b) What is the voltage V_1 across C_1? What is the voltage V_2 across C_2?

(c) What is the energy stored in C_1? What is the energy stored in C_2?



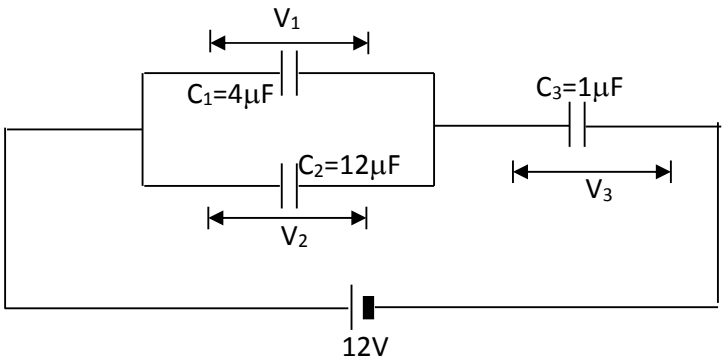
(d) If the two capacitors are replaced with one, what should be the effective capacitance C_{eff} of the replacement?

(e) What is the charge stored in C_{eff}? How is this answer compared with that of part (a)?

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

(g) What is the energy stored in C_{eff}? How is this answer compared with that of part (c)?

Part 3.



(a) What is the charge stored in C_1? What is the charge stored in C_2? What is the charge stored in C_3 ?

(b) What is the voltage V_1 across C_1? What is the voltage V_2 across C_2? What is the voltage V_2 across C_3?

(c) What is the energy stored in C_1? What is the energy stored in C_2? What is the energy stored in C_3?