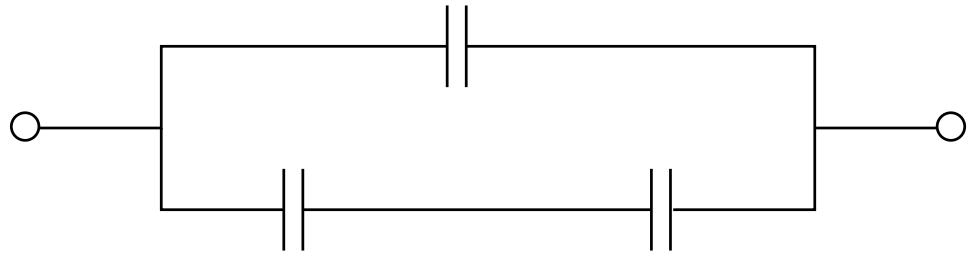
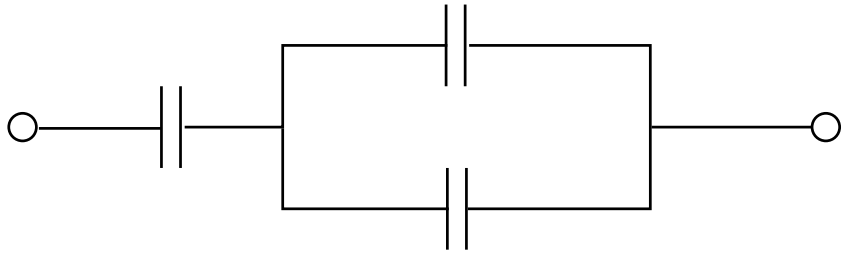
Capacitor Circuit (1)

Find the equivalent capacitances of the two capacitor networks.
All capacitors have a capacitance of $1\mu F$.

(a)



(b)



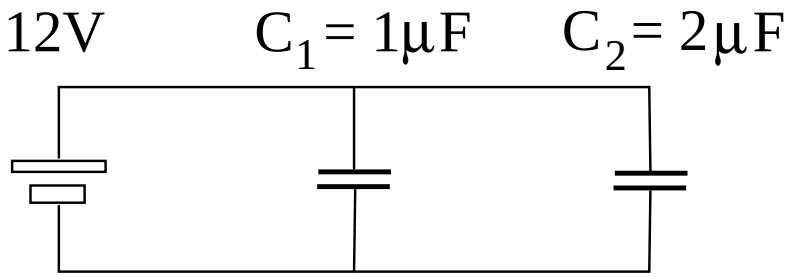
Capacitor Circuit (2)

Consider the two capacitors connected in parallel.

(a) Which capacitor has the higher voltage?

(b) Which capacitor has more charge?

(c) Which capacitor has more energy?

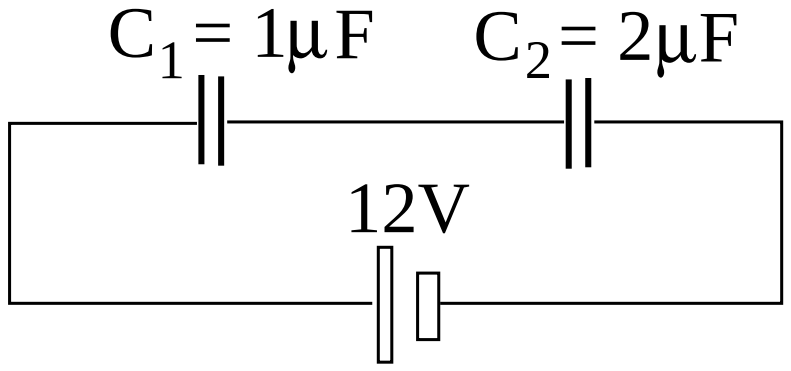


Consider the two capacitors connected in series.

(d) Which capacitor has the higher voltage?

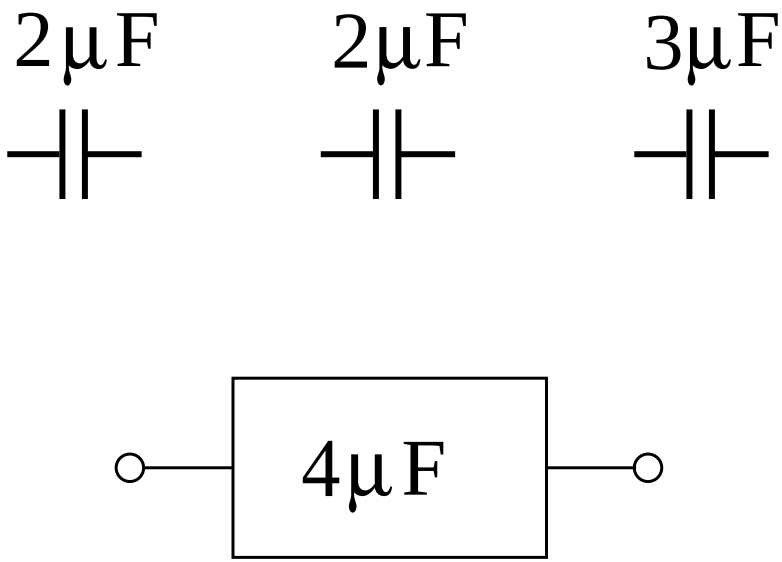
(e) Which capacitor has more charge?

(f) Which capacitor has more energy?



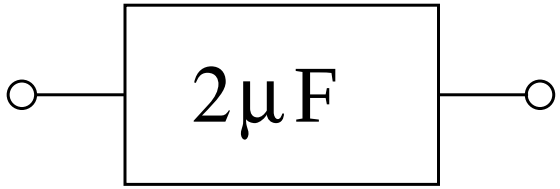
Capacitor Circuit (3)

Connect the three capacitors in such a way that the equivalent capacitance is $C_{eq} = 4\mu$F. Draw the circuit diagram.



Capacitor Circuit (4)

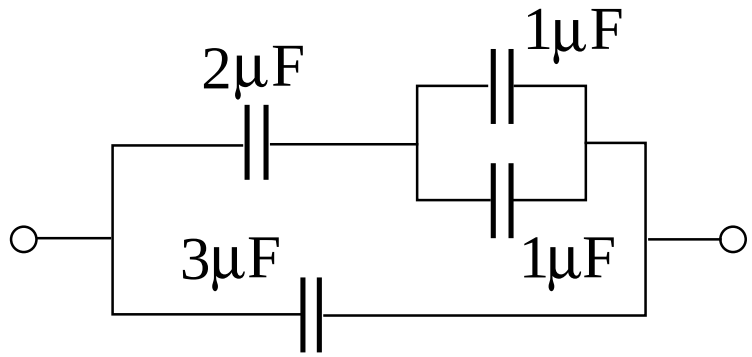
Connect the three capacitors in such a way that the equivalent capacitance is $C_{eq} = 2\mu$F. Draw the circuit diagram.



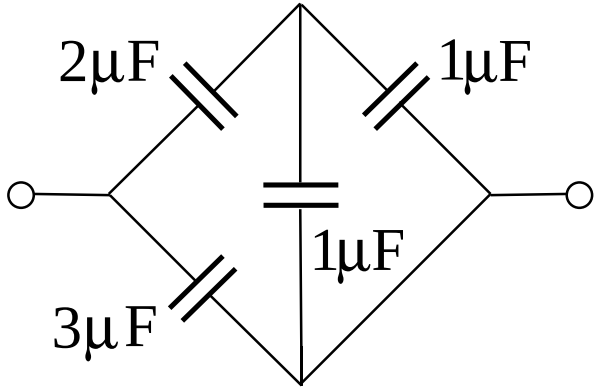
Capacitor Circuit (5)

Find the equivalent capacitances of the following circuits.

(a)



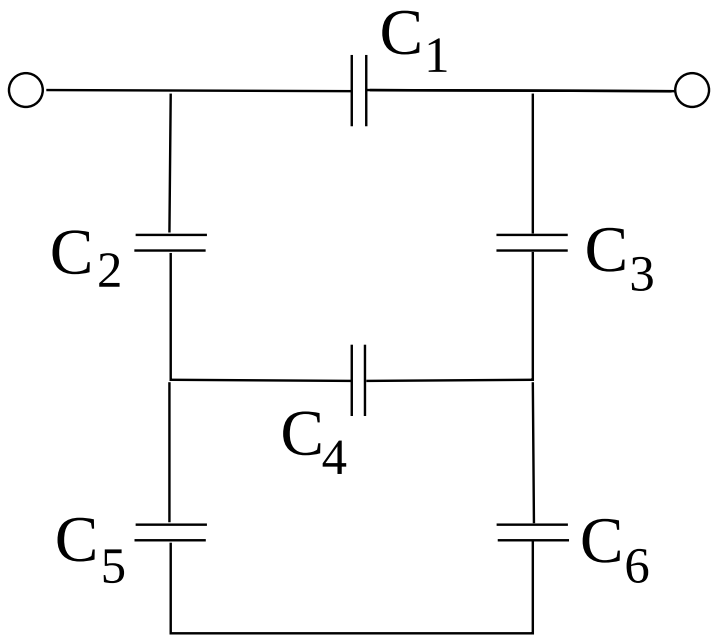
(b)

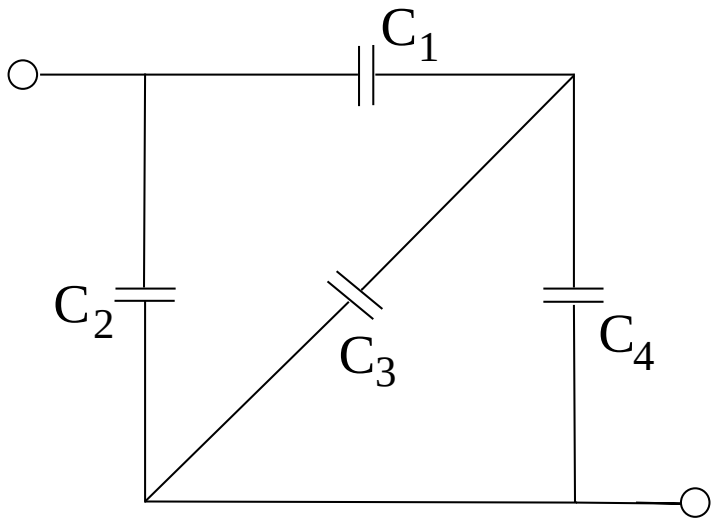


Capacitor Circuit (6)

(a) Name two capacitors from the circuit on the **left** that are connected in **series**.

(b) Name two capacitors from the circuit on the **right** that are connected in **parallel**.

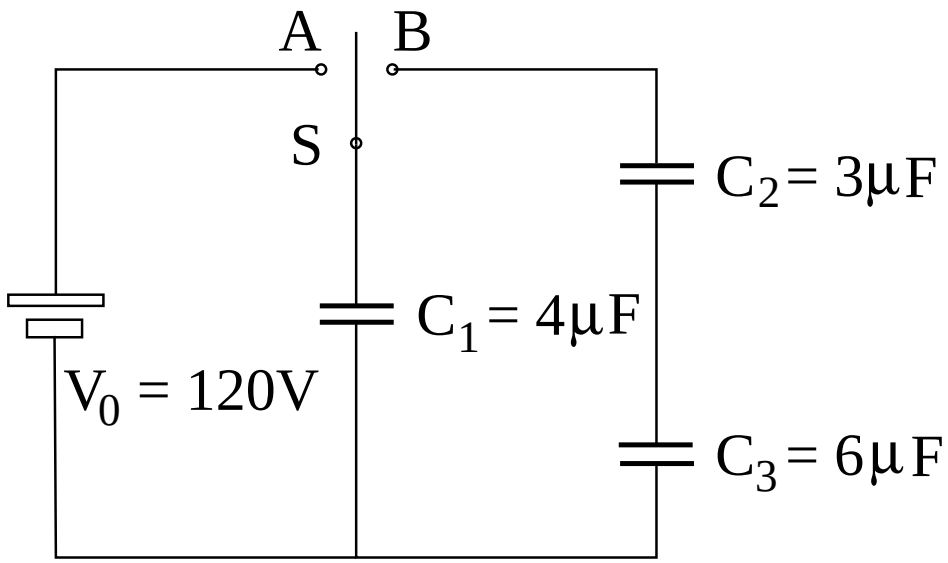




Capacitor Circuit (7)

(a) In the circuit shown the switch is first thrown to A. Find the charge Q_0 and the energy U_A on the capacitor C_1 once it is charged up.

(b) Then the switch is thrown to B, which charges up the capacitors C_2 and C_3. The capacitor C_1 is partially discharged in the process. Find the charges Q_1, Q_2, Q_3 on all three capacitors and the voltages V_1, V_2, V_3 across each capacitor once equilibrium has been reached again. What is the energy U_B now stored in the circuit?



Capacitor Circuit (8)

In the circuit shown find the charges Q_1, Q_2, Q_3, Q_4 on each capacitor and the voltages V_1, V_2, V_3, V_4 across each capacitor

(a) when the switch S is open,

(b) when the switch S is closed.