

S-26-6

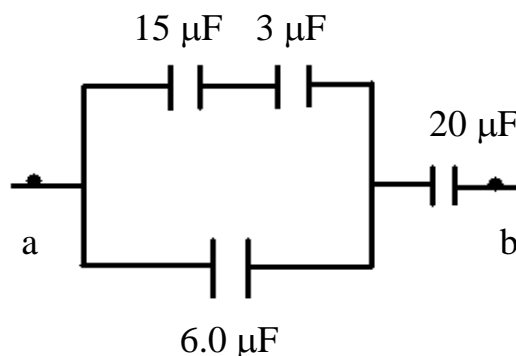
By what factor does the capacitance of a metal sphere increase if its volume is tripled?

S-26-28

Two capacitors when connected in parallel give an equivalent capacitance of 9.0 pF, and an equivalent capacitance of 2.0 pF when connected in series. What is the capacitance of the two capacitors?

S-26-31

Four capacitors are connected as shown in the figure. Find the equivalent capacitance between points [a] and [b]. Calculate the charge on each capacitor if $V_{ab} = 15$ volts.



S-26-49

A $16.0\ \text{pF}$ parallel plate capacitor is charged by a 10 volt battery. If each plate of the capacitor has an area of $5.00\ \text{cm}^2$, what is the energy stored in the capacitor? What is the energy density?

If nylon ($K = 3.4$) is now inserted between the plates (with the battery connected), find the energy stored in the capacitor.

Would it be any different if the battery were disconnected when inserting the dielectric?