[lex56] Capacitor circuit III
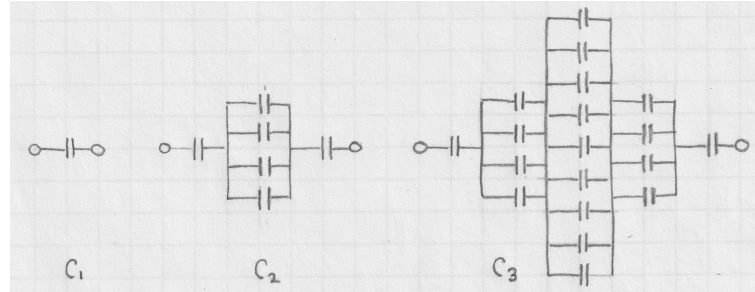
Consider a capacitor circuit of $n(2n^2 + 1)/3$ capacitors, each with capacitance C, constructed according to the pattern shown for $n = 1, 2, 3$. Each column has l^2 capacitors, where l varies between 1 and n.

(a) Determine the equivalent capacitances C_n for $n = 1, \ldots, 4$.

(b) What is the limiting capacitance $C_\infty \doteq \lim_{n\to\infty} C_n$?

Solution: