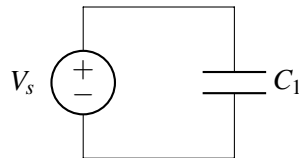EECS 16A   Designing Information Devices and Systems I
Summer 2020
Discussion 4B
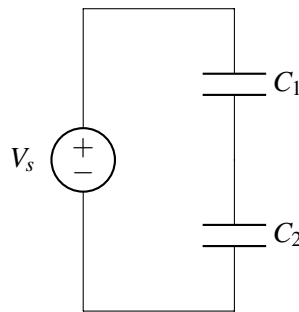
1. **Voltages Across Capacitors**

For the circuits given below, calculate the voltage across the capacitors. For parts (a) and (b) only, also calculate the charge and energy stored in each capacitor. Let $C_1 = 1\,\mu F$, $C_2 = 3\,\mu F$, $V_s = 1\,V$, and $I_s = 2\,mA$.
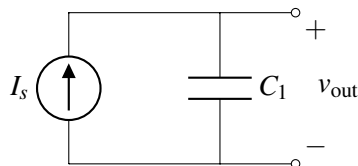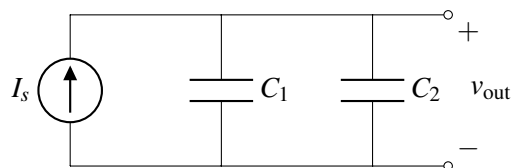
(a)

(b)

2. **Current Sources And Capacitors**

For the circuits given below, give an expression for $v_{out}(t)$ in terms of I_s, C_1, C_2, and t. Assume that all capacitors are initially uncharged, i.e. the initial voltage across each capacitor is $0\,V$.

(a)

(b)

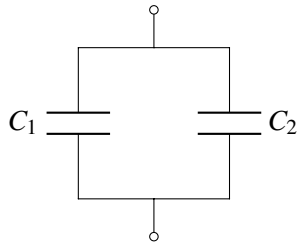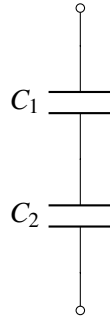### 3. Practice: Series And Parallel Capacitors

Derive C_{eq} for the following circuits.

(b)   (c)

(a)