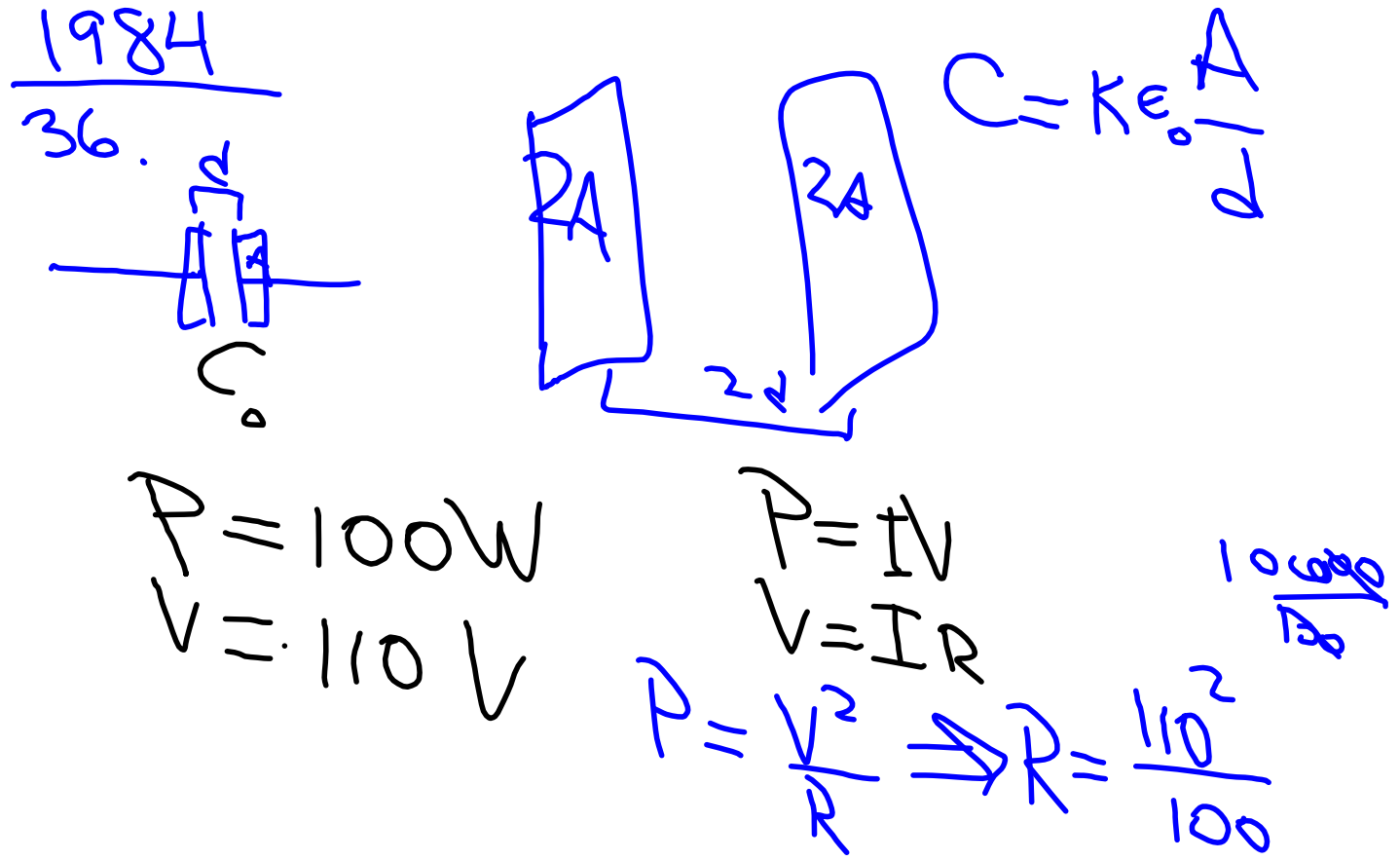


36. A parallel-plate capacitor has a capacitance C_o. A second parallel-plate capacitor has plates with twice the area and twice the separation. The capacitance of the second capacitor is most nearly
(A) $\frac{1}{4}C_o$ (B) $\frac{1}{2}C_o$ (C) C_o (D) $2C_o$ (E) $4C_o$

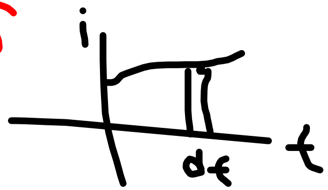
37. When lighted, a 100-watt light bulb operating on a 110-volt household circuit has a resistance closest to
(A) $10^{-2}\ \Omega$ (B) $10^{-1}\ \Omega$ (C) $1\ \Omega$ (D) $10\ \Omega$ (E) $100\ \Omega$

38. If i is current, t is time, E is electric field intensity, and x is distance, the ratio of $\int i dt$ to $\int E dx$ may be expressed in (A) coulombs (B) joules (C) newtons (D) farads (E) henrys

38. i $\quad t \quad E \quad x$

$A = \frac{C}{s}$ $\quad s \quad \frac{N}{C} \quad m$

$$\frac{\int i\,dt}{\int E\,dx} = \frac{\frac{C}{s}\cdot s}{\frac{N}{C}\cdot m}$$



$$\frac{C}{J/C} = \frac{C^2}{J}$$

$$Q = VC \Rightarrow C = \frac{Q}{V} \quad \frac{C}{J/C}$$