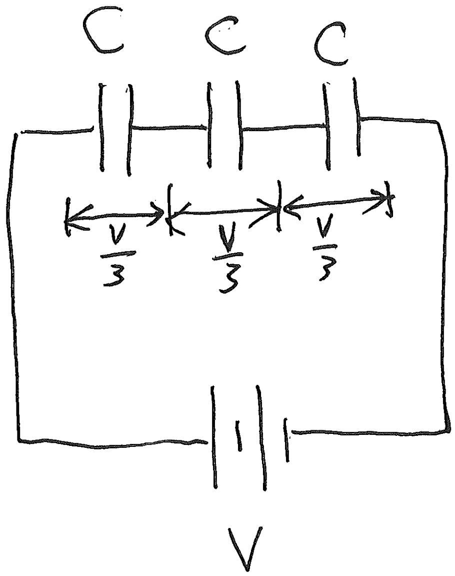
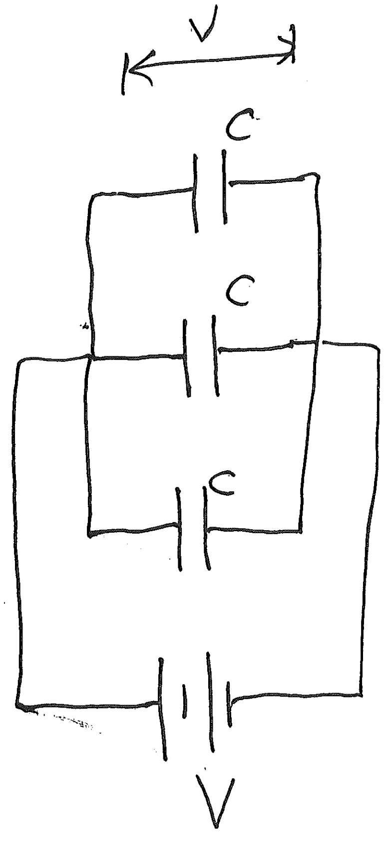
$$C = \frac{Q}{V}$$

$$U = \frac{1}{2} C V^2$$



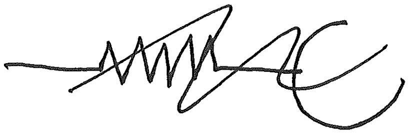
$$U = \left[\frac{1}{2} C \left(\frac{V}{3}\right)^2\right] \times 3$$

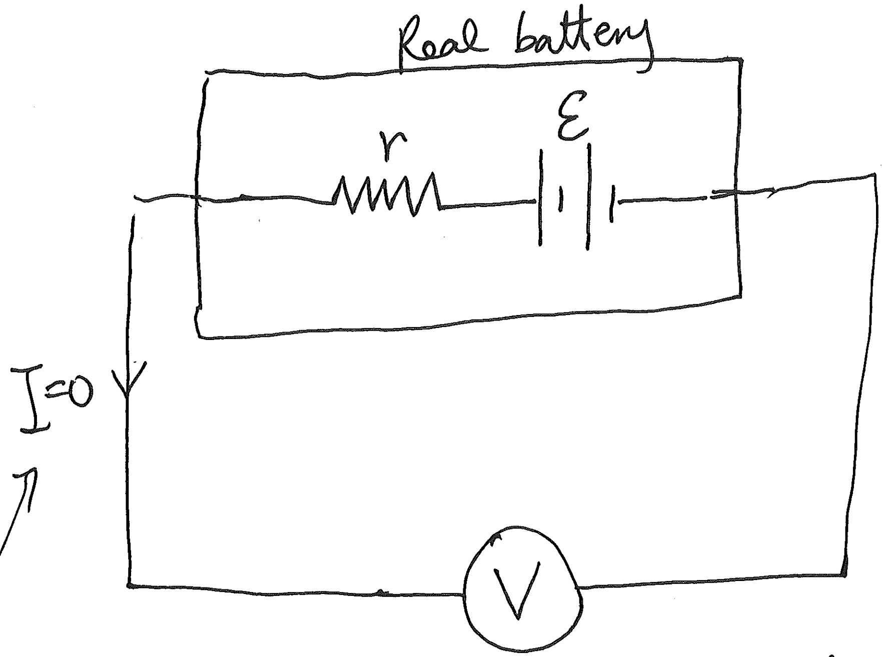
$$= \frac{1}{3} \times \left(\frac{1}{2} C V^2\right)$$



$$U = \left(\frac{1}{2} C V^2\right) \times 3$$

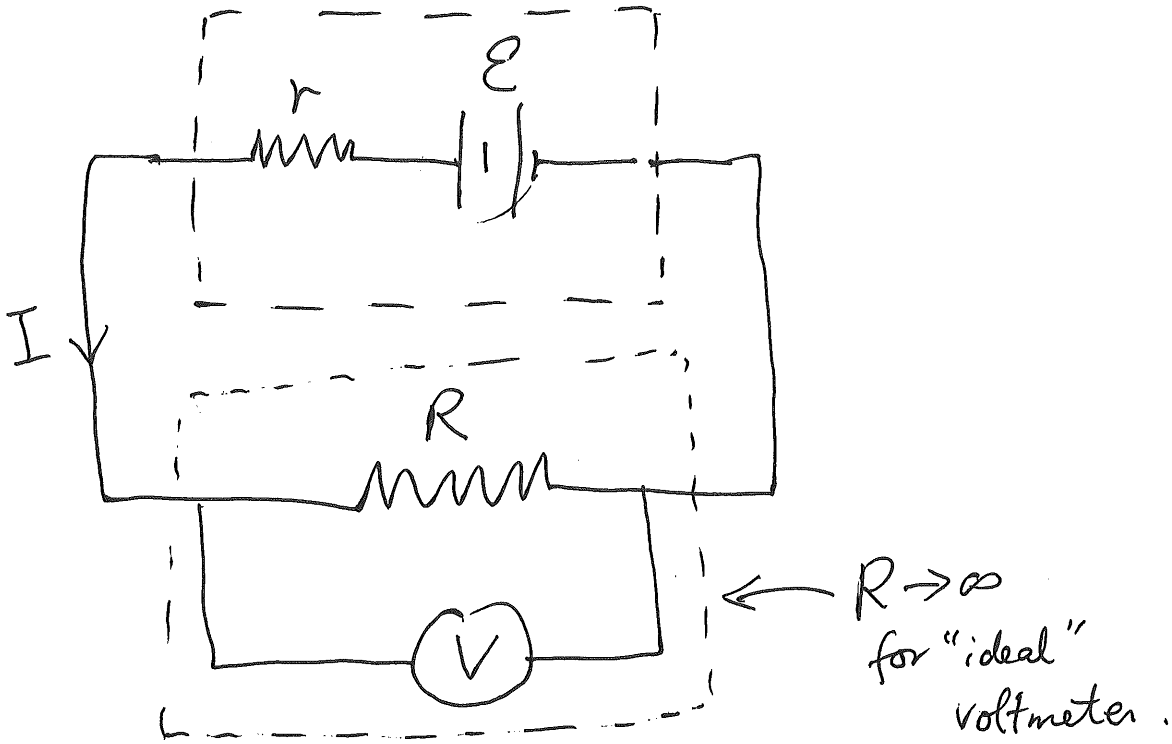
$$= 3 \times \left(\frac{1}{2} C V^2\right)$$





Voltmeter will real ε.

because
ideal voltmeter has
"∞" resistance



$$I = \frac{\mathcal{E}}{R + r}$$

$$V = IR = \frac{\mathcal{E} R}{R + r}.$$

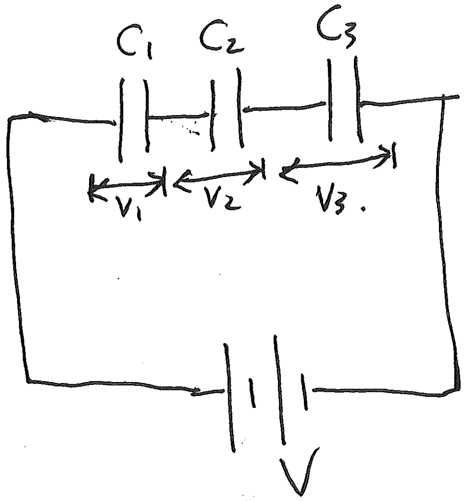
e.g. $r = 1\,\Omega$. $R = 99\,\Omega$. $V = 0.99\,\mathcal{E}$.

$\cancel{r =}$ $R = 9\,\Omega$ $V = 0.9\,\mathcal{E}$.

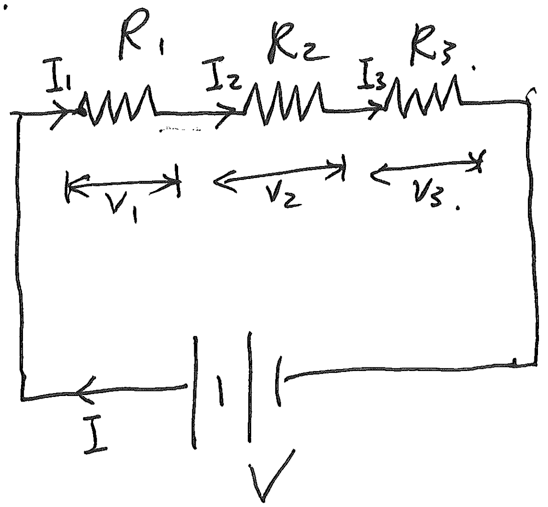
$R = 1\,\Omega$. $V = 0.5\,\mathcal{E}$.

In series.

C



R.



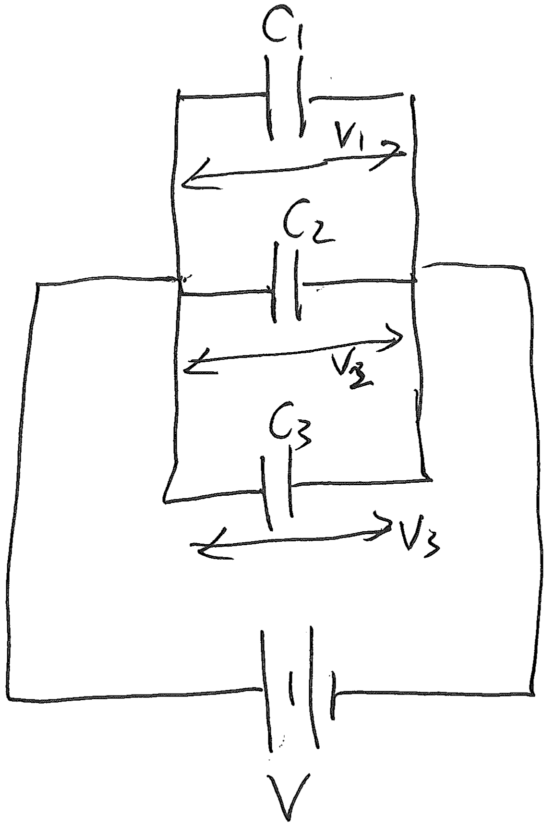
$V = V_1 + V_2 + V_3$ $\xleftrightarrow[\text{}]{\text{Same result, Same principle}}$ $V = V_1 + V_2 + V_3$.

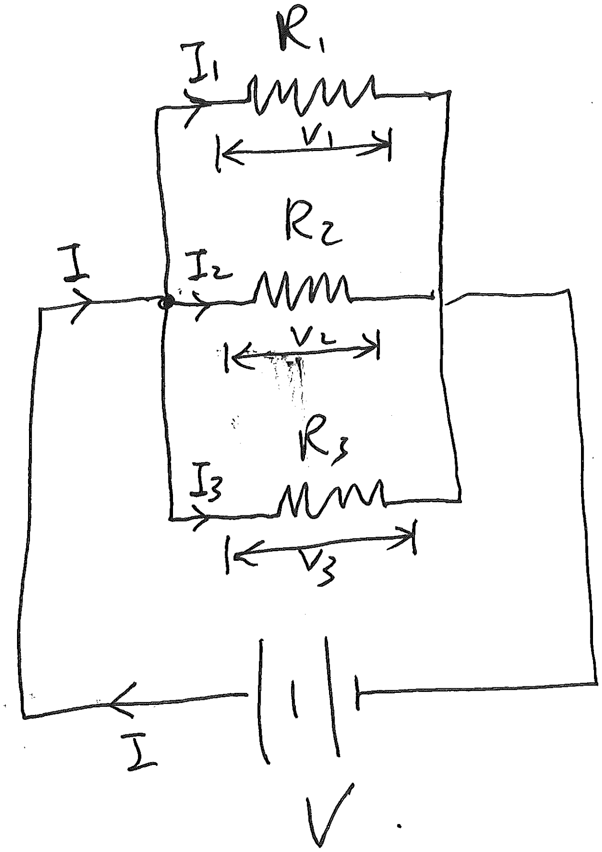
$Q_1 = Q_2 = Q_3$. $\xleftrightarrow[\text{Different principle.}]{\text{Similar result}}$ $I_1 = I_2 = I_3$,

$$\frac{1}{C_s} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}. \quad \xleftrightarrow[\text{result!}]{\text{Different}} \quad R_s = R_1 + R_2 + R_3$$

C	R

In parallel





C	R
$V_1 = V_2 = V_3 = V$	$V_1 = V_2 = V_3 = V$
$Q_1 \neq Q_2 \neq Q_3$.	$I_1 \neq I_2 \neq I_3$
but $Q = Q_1 + Q_2 + Q_3$	but $I = I_1 + I_2 + I_3$.

$$C_p = C_1 + C_2 + C_3 . \quad \longleftrightarrow \quad \frac{1}{R_s} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} .$$