

Kap 26 Elektrisk krets

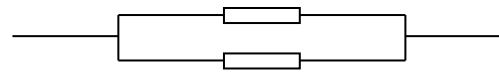
Strøm $I = \frac{dQ}{dt}$

Ohms lov $V = RI$

Seriekobling $R = \sum_i R_i \quad R = R_1 + R_2 + \dots$

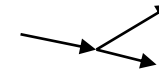


Parallellkobling $\frac{1}{R} = \sum_i \frac{1}{R_i} \quad \frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$

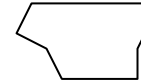


Kirchof's lover :

1.lov (knutepunkt) $\sum I = 0$



2.lov (strømsløyfe) $\sum V = 0$

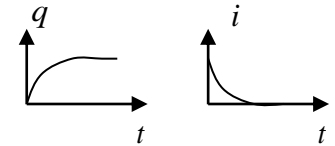
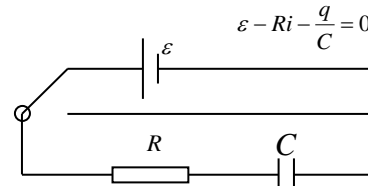


Kondensator

Oppladning $q = C\varepsilon(1 - e^{-\frac{t}{RC}})$

$i = I_0 e^{-\frac{t}{RC}}$

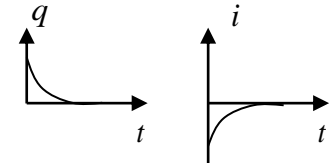
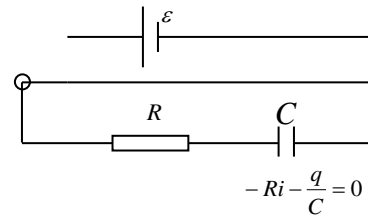
i er den deriverte av q



Utladning

$q = Q_0 e^{-\frac{t}{RC}}$

$i = I_0 e^{-\frac{t}{RC}}$



Tidskonstant $\tau = RC$

Tiden det tar for strømmen å synke til 1/e -del av sin opprinnelige verdi.