Opg. 26.49 i Young & Freedman. Finn strøm I i amperemeter A
a) umiddelbart etter bryter slått på: $I(t=0^+)$,
b) etter svært lang tid: $I(\infty)$.

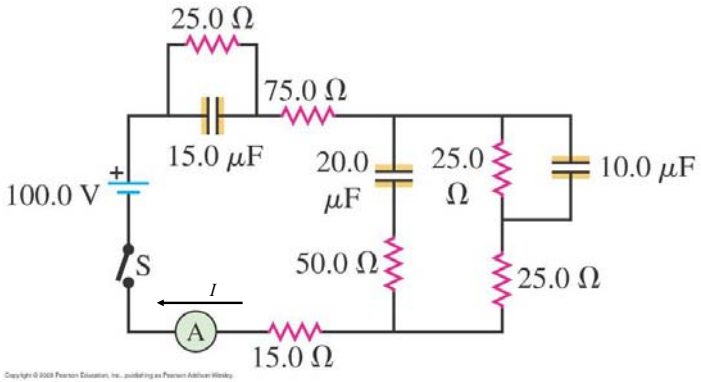


Figure 26.60

Opg. 26.49 i Young & Freedman. Finn strøm I i amperemeter A
a) umiddelbart etter bryter slått på: $I(t=0^+)$, kondensatorer som kortslutning

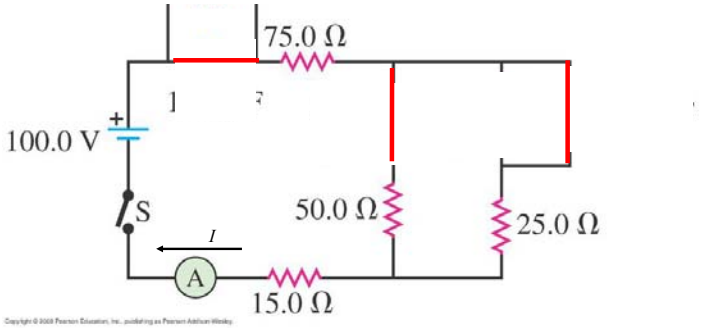


Figure 26.60

Opg. 26.49 i Young & Freedman. Finn strøm I i amperemeter A
b) etter svært lang tid: $I(\infty)$. kondensatorer som åpen krets

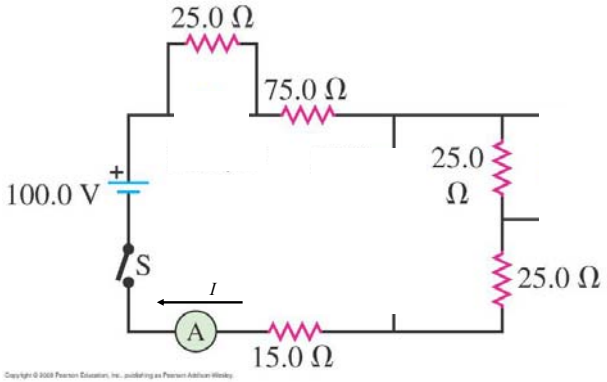
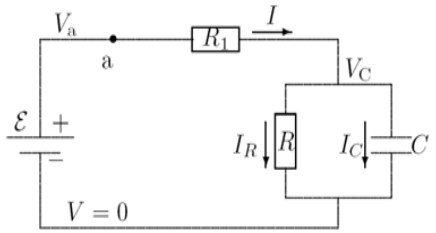


Figure 26.60

Øving 8, opg. 6.

Alltid er $V_a = \mathcal{E}$



$t=0^+$ (kond. som kortsluttet): $I = \mathcal{E}/R_1$ og $I_C = I$

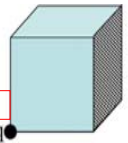
$t\to\infty$ (kond. som åpen grein): $I = \mathcal{E}/(R_1+R)$ og $I_C = 0$

alle t Enklest å løse likning for I_C, som ifølge ovenfor må ha form:
$I_C(t) = I_C(0)\exp(-t/\tau)$

Øving 9, flervalg:

a) En punktladning q er plassert i det ene hjørnet av en kube. Hva blir elektrisk fluks gjennom den skraverte (høyre) sideflata i figuren?

A) q
B) $q/3$
C) $q/4$
D) $q/8$
E) $q/24$



Elek. fluks = fluks til *D*-feltet

$\Phi = \boldsymbol{D}\cdot\boldsymbol{A}$

Young & Freedman, kap. 22.2:

If the area A is flat but not perpendicular to the field $\vec{E}$, then fewer field lines pass through it. In this case the area that counts is the silhouette area that we see when looking in the direction of $\vec{E}$. This is the area $A_\perp$ in Fig. 22.6b and is equal to $A\cos\phi$ (compare to Fig. 22.5b). We generalize our definition of electric flux for a uniform electric field to

$$\Phi_E = EA\cos\phi \qquad \text{(electric flux for uniform } \vec{E}\text{, flat surface)} \qquad (22.1)$$

Since $E\cos\phi$ is the component of $\vec{E}$ perpendicular to the area, we can rewrite Eq. (22.1) as

$$\Phi_E = E_\perp A \qquad \text{(electric flux for uniform } \vec{E}\text{, flat surface)} \qquad (22.2)$$

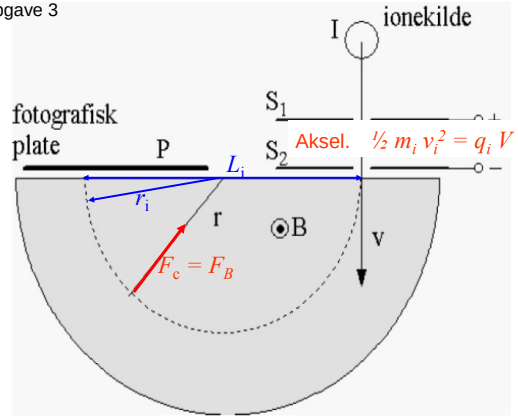
In terms of the vector area $\vec{A}$ perpendicular to the area, we can write the electric flux as the scalar product of $\vec{E}$ and $\vec{A}$:

$$\Phi_E = \vec{E}\cdot\vec{A} \qquad \text{(electric flux for uniform } \vec{E}\text{, flat surface)} \qquad (22.3)$$

Elek. fluks = fluks til *E*-feltet

$\Phi_E = \boldsymbol{E}\cdot\boldsymbol{A}$

Øving 9, oppgave 3



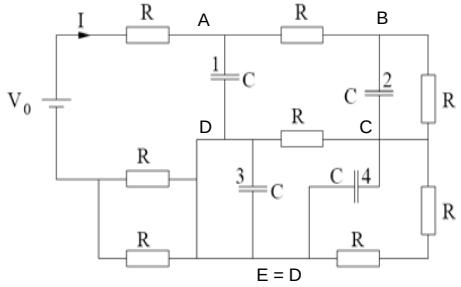
a + b) De to likningene bestemmer de to ukjente v_p og r_p

c) Søk etter masseforholdet m_1/m_p med de samme to likningene for masse 1 og for protonet.
Samme for m_2/m_p

Eksamen juni 2007, oppg. 3 a)

Lang tid:

Finn I, samt Q_1, Q_2, Q_3, Q_4



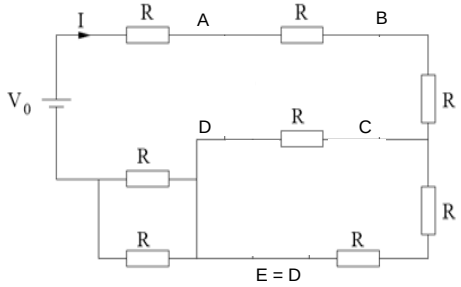
R = 1.0 M Ω
C = 1.0 nF
V_0 = 1.25 kV

$Q_1 = C\,V_1 = C\,(V_A - V_D)$ etc.

Eksamen juni 2007, oppg. 3 a)

Lang tid: Kondensatorer oppladd og kan "tas bort".

Finn I, samt Q_1, Q_2, Q_3, Q_4



R = 1.0 M Ω
C = 1.0 nF
V_0 = 1.25 kV