

## 2.2 SPENNING

## 2.2.1

$$a) V_A = \frac{W_A}{Q} = \frac{350 \text{ J}}{15 \text{ C}} = \underline{\underline{23,3 \text{ V}}}$$

$$Q = I \cdot t = 1,5 \text{ A} \cdot 10 \text{ s} = \underline{\underline{15 \text{ C}}}$$

$$V_B = \frac{W_B}{Q} = \frac{150 \text{ J}}{15 \text{ C}} = \underline{\underline{10 \text{ V}}}$$

b)

$$U_{AB} = V_A - V_B = 23,3 \text{ V} - 10 \text{ V} = \underline{\underline{13,3 \text{ V}}}$$

c)

$$E = \frac{U}{L} = \frac{13,2 \text{ V}}{12 \text{ m}} = \underline{\underline{1,1 \text{ V/m}}}$$

## 2.2.2

$$Q = I \cdot t = 20 \text{ A} \cdot 2 \text{ s} = \underline{\underline{40 \text{ C}}}$$

$$V_A = \frac{W_A}{Q} = \frac{16000 \text{ J}}{40 \text{ C}} = \underline{\underline{400 \text{ V}}}$$

$$V_B = \frac{W_B}{Q} = \frac{8000 \text{ J}}{40 \text{ C}} = \underline{\underline{200 \text{ V}}}$$

$$V_C = \frac{W_C}{Q} = \frac{4000 \text{ J}}{40 \text{ C}} = \underline{\underline{100 \text{ V}}}$$

$$U_1 = V_A - V_B = 400 \text{ V} - 200 \text{ V} = \underline{\underline{200 \text{ V}}}$$

$$U_2 = V_B - V_C = 200 \text{ V} - 100 \text{ V} = \underline{\underline{100 \text{ V}}}$$

$$U = U_1 + U_2 = 200 \text{ V} + 100 \text{ V} = \underline{\underline{300 \text{ V}}}$$