

例題3 解答例

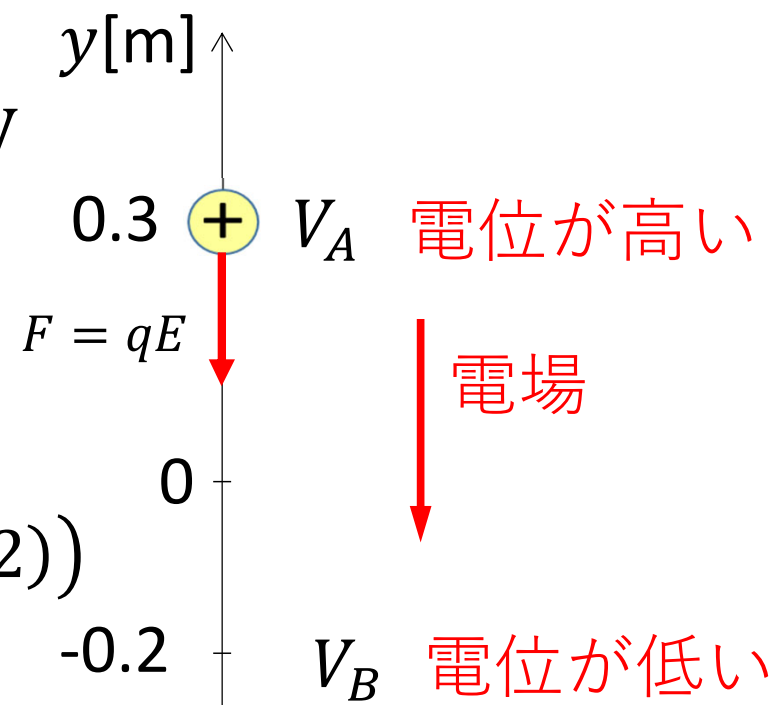
(1) 一様電場の電場と電位の関係式 $V = Ed$ を使う。

$$V_A = 5.0 \text{ V/m} \cdot 0.30 \text{ m} = 1.5 \text{ V}$$

$$V_B = 5.0 \text{ V/m} \cdot (-0.20 \text{ m}) = -1.0 \text{ V}$$

(2) 電場がした仕事

$$\begin{aligned} W_{A \rightarrow B} &= Fd = qEd \\ &= +2.0 \times 10^{-7} \cdot 5.0 \cdot (0.3 - (-0.2)) \\ &= 5.0 \times 10^{-7} \text{ J} \end{aligned}$$



または

$$W_{A \rightarrow B} = q(V_A - V_B) = +2.0 \times 10^{-7} \cdot (1.5 - (-1.0)) = 5.0 \times 10^{-7} \text{ J}$$