

⑥ at $s=a - V=V_0 \Rightarrow V_0 = a_0 + a_1 a$

$s=b - V=0 \Rightarrow 0 = a_0 + a_1 b \rightarrow a_0 = -a_1 b$

ad $a_1 = \frac{V_0 + a_1 b}{a}, a_1 = \frac{(V_0 a)}{1 - b/a}$

ad $V(s) = -\frac{V_0(b/a)}{1 - \frac{b}{a}} + \frac{(V_0 a)}{1 - \frac{b}{a}} s$

$= \left[\frac{-V_0 a b}{a-b} + \frac{V_0 a}{a-b} s \right]$

$V(s) = \frac{V_0 a}{a-b} [s-b]$

$\rightarrow \vec{E} = -\frac{V_0 a}{a-b} \hat{s}$ ad $\vec{J} = -\frac{V_0 k a}{a-b} \frac{\hat{s}}{s}$

ad then $I = \int \vec{J} \cdot d\vec{s} = -\frac{V_0 k a}{a-b} \int_0^L \frac{ds}{s}$

$I = -\frac{V_0 k a 2\pi L}{a-b}$

$= (V_0/R)$

$\Rightarrow R = -\frac{2\pi k L}{a-b} = \frac{2\pi k L}{b-a}$