P.4-6 Poisson's eq. $\nabla^2 V = -\frac{A}{\epsilon r} \longrightarrow \frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial V}{\partial r}\right) = -\frac{A}{\epsilon r}$.

Solution: $V = -\frac{A}{\epsilon} r + c_1 \ln r + c_2$.

B.C.: $\begin{cases} \text{At } r=a,\ V_0 = -\frac{A}{\epsilon} a + c_1 \ln a + c_2. \\ \text{At } r=b,\ 0 = -\frac{A}{\epsilon} b + c_1 \ln b + c_2. \end{cases}$

$c_1 = \frac{\frac{A}{\epsilon}(b-a) - V_0}{\ln(b/a)}$,

$c_2 = \frac{V_0 \ln b + \frac{A}{\epsilon}(a\ln b - b\ln a)}{\ln(b/a)}$.