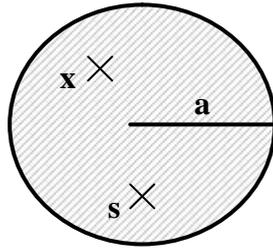


程式 57 Degenerate Kernel (Green function)



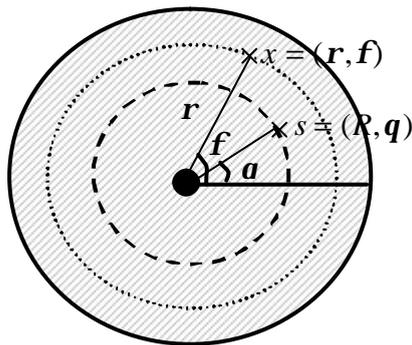
Please derive the Green's function (closed form and degenerate form) for the Laplace equation which satisfies

$$\text{G.E.: } \nabla_x^2 G(x, s) = \mathbf{d}(x - s), \quad x \in \Omega$$

and its boundary condition is

$$\text{B.C.: } G(x, s) = 0, \quad x \in B$$

Besides, please comments on the relationship of this problem and Poisson integral formula.



Please find the $G(x, s) = \begin{cases} ?, & R < r < a \\ ?, & 0 < r < R \end{cases}$ if the range is changed.

References:

- 【1】M.D. Greenberg, Application of Green's Functions in Science and Engineering ,
Prentice-Hall, London, 1971.