

1092-34-32

Douglas R. Anderson* (andersod@cord.edu), Department of Mathematics, 901 8th Street S, Concordia College, Moorhead, MN 56562. *Green's functions for fourth-order four-point boundary value problems.*

We determine Green's functions and their positivity for two fourth-order four-point boundary value problems, namely

$$\begin{aligned} -y^{(4)}(t) &= 0, \quad 0 < t < 1 \\ y(0) = y(1) = y''(\xi) = y''(1 - \xi) &= 0 \end{aligned}$$

for the interior inflection point $\xi \in (1/3, 1/2)$, and

$$\begin{aligned} -y^{(4)}(t) &= 0, \quad 0 < t < 1 \\ y(0) = y''(p) = y'(q) = y'''(1) &= 0, \end{aligned}$$

where the boundary points p and q satisfy $\frac{2}{3}q < p < q \leq \frac{1}{2}$. These boundary conditions are not covered in the literature. Upper and lower bounds for Green's functions are also found. (Received July 10, 2013)