

Exercise 1.4.3

Determine the equilibrium temperature distribution for a one-dimensional rod composed of two different materials in perfect thermal contact at $x = 1$. For $0 < x < 1$, there is one material ($c\rho = 1$, $K_0 = 1$) with a constant source ($Q = 1$), whereas for the other $1 < x < 2$, there are no sources ($Q = 0$, $c\rho = 2$, $K_0 = 2$) (see Exercise 1.3.2) with $u(0) = 0$ and $u(2) = 0$.