

Exercise 2

Solve the completely inhomogeneous diffusion problem on the half-line

$$\begin{aligned}v_t - kv_{xx} &= f(x, t) && \text{for } 0 < x < \infty, \quad 0 < t < \infty \\v(0, t) &= h(t) && v(x, 0) = \phi(x),\end{aligned}$$

by carrying out the subtraction method begun in the text.