

Exercise 10

Solve Example 1.6.1 with the initial data

$$(i) f(x) = \begin{cases} \frac{hx}{a} & \text{if } 0 \leq x \leq a, \\ h(\ell - x)/(\ell - a) & \text{if } a \leq x \leq \ell, \end{cases} \quad \text{and } g(x) = 0.$$

$$(ii) f(x) = 0 \quad \text{and} \quad g(x) = \begin{cases} \frac{u_0 x}{a} & \text{if } 0 \leq x \leq a, \\ u_0(\ell - x)/(\ell - a) & \text{if } a \leq x \leq \ell. \end{cases}$$