Problem (Evans)**.** *Let* $d \in \mathbb{R}$*,* $T > 0$*,* $f \in L^2((0,T) \times (0,1))$*,* $g \in W_0^{1,2}((0,1))$*,* $h \in L^2(0,1)$*.*
Formulate a definition of a weak solution to the problem

$$u_{tt} + du_t - u_{xx} = f \qquad \text{in } (0,T) \times (0,1), \tag{1}$$

$$u = 0 \qquad \text{on } ([0,T] \times \{0\}) \cup ([0,T] \times \{1\}), \tag{2}$$

$$u = g, u_t = h \qquad \text{on } \{t = 0\} \times (0,1). \tag{3}$$

Show there exists at most one weak solution of this initial/boundary-value problem. If necessary add a condition on d*.*