

Exercise 6

Solve $u_{tt} = c^2 u_{xx}$ in $0 < x < \infty$, $0 \leq t < \infty$, $u(x, 0) = 0$, $u_t(x, 0) = V$,

$$u_t(0, t) + au_x(0, t) = 0,$$

where V , a , and c are positive constants and $a > c$.