



Consider the wave equation, $u_{tt} = c^2 u_{xx}$, with Dirichlet boundary conditions on [0, 1], and initial condition given below. What is the coefficient of $\sin(4 \pi x) \cos(4 c \pi t)$ in the normal-mode expansion of the solution?

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$$u(x_{0}) = \begin{vmatrix} \frac{x}{5} & \text{if } 0 \le x \le 0.5 \\ \frac{1-x}{5} & \text{if } 0.5 \le x \le 1 \end{vmatrix}, \quad \frac{\partial u}{\partial t}(x_{0}) = 0$$

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$$u(x_{0}) = \begin{vmatrix} \frac{x}{5} & \frac{x}{60} & \frac{\partial u}{60} &$$

Consider the wave equation, $u_{tt} = c^2 u_{xx}$, with Dirichlet boundary conditions on [0, 1], and initial condition given below. What is the coefficient of $\sin(5 \pi x) \cos(5 c \pi t)$ in the normal-mode expansion of the solution?

