

Asagida baslangic kosullari ile verilen homojen dalga denklemini göz önüne alalım:

$$a^2 \frac{\partial^2 u}{\partial x^2} = \frac{\partial^2 u}{\partial t^2}, \quad -\infty < x < \infty, \quad t > 0$$

$$u(x, 0) = f(x), \quad \left. \frac{\partial u}{\partial t} \right|_{t=0} = g(x).$$

Her bir

$$f(x) = \sin x, \quad g(x) = 1$$

$$f(x) = \sin x, \quad g(x) = \cos x$$

$$f(x) = 0, \quad g(x) = \sin 2x$$

$$f(x) = e^{-x^2}, \quad g(x) = 0$$

kosullari icin denklemin d' Alembert formulu ile çözünüz.