Construct a Green function to solve the ODE problem

$$\frac{d^2y}{dx^2} + 4y = f(x), \quad y(0) = 0, \quad y(L) = 0.$$ 

(That is, find $G$ so that $y(x) = \int_0^L G(x, z)f(z) \, dz$.) For what values of $L$ is this problem impossible? Explain why those values are special.