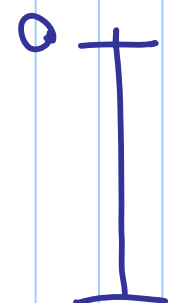


$$\left\{ \begin{array}{l} U_{xx} = U_{tt} \\ U(x, 0) = f(x) \\ U_t(x, 0) = 0 \\ U(0, t) = U(1, t) = 0 \end{array} \right.$$



Extend f by:

$$\begin{array}{l} * \int f(-x) = -f(x) \text{ odd} \\ \int f(x+2) = f(x) \text{ periodic with } p=2 \end{array}$$

Here the solution is

$$u(x, t) = \frac{1}{2} [f(x+t) + f(x-t)]$$

$$\begin{aligned} u(0.3, 4) &= \frac{1}{2} [f(0.3+4) + f(0.3-4)] \\ &= \frac{1}{2} [f(4.3) + f(-3.7)] = f(0.3) \end{aligned}$$

$$f(4.3) = f(4.3-4) = f(0.3)$$

$$f(-3.7) = f(-3.7+4) = f(0.3)$$