

Exercise 1

- (a) Solve as a series the equation $u_t = u_{xx}$ in $(0, 1)$ with $u_x(0, t) = 0$, $u(1, t) = 1$, and $u(x, 0) = x^2$. Compute the first two coefficients explicitly.
- (b) What is the equilibrium state (the term that does not tend to zero)?