# MATH 603 - Final Assignment

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# The Problems

1. Write a computer program to implement the Fast Fourier Transform (FFT).
2. Using the FFT, write a computer program to solve numerically the initial-value problem (IVP) for the heat equation,

$$\begin{cases} u_t = u_{xx} & (t,x) \in [0,\infty) \times [0,1] \\ u(0,x) = f(x) & x \in [0,1] \\ u(t,0) = u(t,1) = 0 & t \in [0,\infty) \end{cases}$$

# Outline

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Thank you!