

# ME573 Homework Set # 6

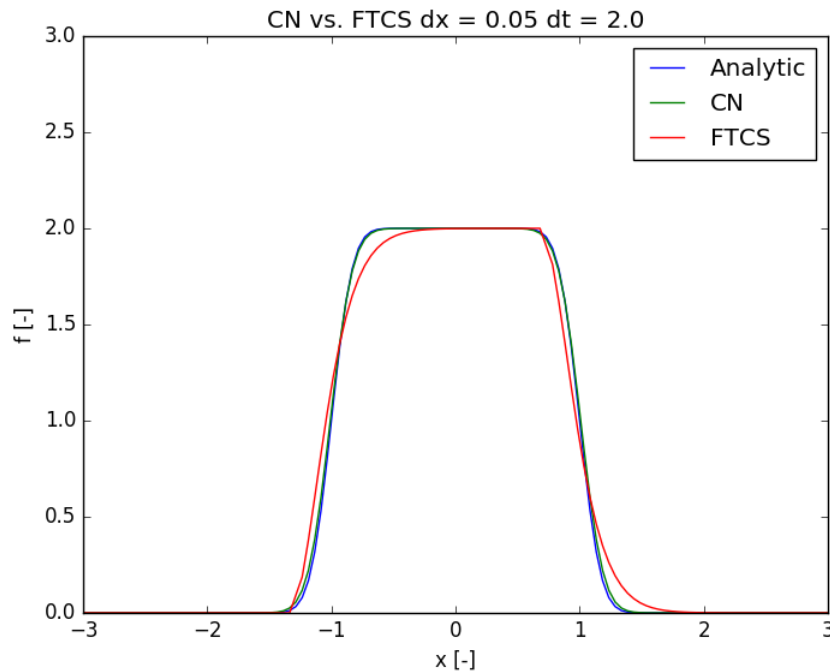
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## 1 Problem 1

This problem solved the 1D heat diffusion equation using the Crank-Nicolson (CN) and the forward in time, central in space method (FTCS). Figure 1 shows the results of the schemes compared to the analytic solution. The  $L_{\text{inf}}$  error was calculated for both schemes. The CN error was 0.0676 and the FTCS error was 0.0513.



## 2 Problem 2

This problem solved the 2D heat diffusion equation using the FTCS method. Figure ?? shows the results of this scheme, after 80 time steps. Figure ?? shows the  $L_{\text{inf}}$  error of the scheme. The maximum error was 0.05128. This error is too large and should be investigated.

