

# Math 269B: Assignment 5

*Assigned Friday Feb 8, due Friday Feb 15*

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## Theory

[1]-[3] Problems 4.1.2, , 5.1.1, 5.2.3 of Strikwerda.

[4] Find the modified PDE for the Crank-Nicolson scheme, with leading order corrections to the original PDE  $u_t + a u_x = 0$ . Remember to do the expansion around the midpoint  $(t = (n + 1/2)k, x = mh)$ .

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