

# 18.311 — MIT (Spring 2013)

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## **Problem Set # 08. Due: Day of last lecture.**

**Turn it in before 3:00 PM, in the box provided in Room 2-285.**

**IMPORTANT:** The Regular and the Special Problems must be **stapled in TWO SEPARATE packages**, each with your **FULL NAME** clearly spelled.

### **1 Regular Problems.**

From the file linked under *AENS Associated Equation to a Numerical Scheme Problems* in the PROBLEMS and PROBLEM SETS section of the course WEB page, do the following:

Problem AENS04a. Explicit forward FD for  $u_t - u_x = 0$ .

Problem AENS04b. Explicit backward FD for  $u_t - u_x = 0$ .

Problem AENS07a. Forward Euler FD for  $u_t = u_{xx}$ .

### **2 Special Problems.**

From the file linked under *AENS Associated Equation to a Numerical Scheme Problems* in the PROBLEMS and PROBLEM SETS section of the course WEB page, do the following:

Problem AENS04c. Explicit centered FD for  $u_t - u_x = 0$ .

Problem AENS04d. Lax-Friedrichs FD for  $u_t - u_x = 0$ .

**THE END.**