

Math 32 A: HW7 Due Friday, November 21, 2008

- **Homework Details**

1. Only use the front side of the paper.
2. Write your name, ID number and section number on the back of the last page.
3. Homework will be graded on a 10 point scale. Three problems (chosen by the instructor) will be graded for 2 points each, and 4 points will be given for completeness of your work.
4. HW due at the end of class. No credit for late HW, no exceptions.

Assigned Problems

- **Section 15.5**

Problems 1-3,7-11,21-24,49

- **Section 15.6**

Problems 4-6,11-15

- **Extra Credit:**

- a. Show that $u(x, y, t) = f(x - at, y - bt)$ satisfies the equation

$$u_t + au_x + bu_y = 0.$$

- b. Assume $v(x, y, t)$ satisfies the equation

$$v_t = \mu(v_{xx} + v_{yy}).$$

Use the results of part a to find a solution $w(x, y, t)$ in terms of $v(x, y, t)$ that satisfies

$$w_t + aw_x + bw_y = \mu(w_{xx} + w_{yy}).$$