

**Math 325: Differential Equations**

Name: \_\_\_\_\_

**Quiz 5** *Dec. 3, 1997*

1. Compute the Fourier series of the function  $f(x) = x$  on  $-3 \leq x \leq 3$ .

2. Find the solution to the heat equation  $4u_{xx} = u_t$  for  $0 \leq x \leq 3$ ,  $t \geq 0$ , subject to the boundary conditions  $u(0, t) = 0$ ,  $u(3, t) = 0$  for  $t \geq 0$ , and  $u(x, 0) = x$  for  $0 \leq x < 3$ .