

## Assignment 2 for MAT5011

Due: Oct. 20th (Sat.), 2007

Chapt.1, 10, 12

Extra Problem 4: Suppose that  $f_n \geq 0$ , measurable and  $\int_X f_n d\mu \rightarrow 0$  as  $n \rightarrow +\infty$ . Does it follow that  $f_n \rightarrow 0$ , *a.e.* in  $\mu$  ?

Extra Problem 5: Let  $f \in L^1(\mu)$ . Suppose that for any  $g \in L^1(\mu)$ , there holds  $fg \in L^1(\mu)$ . Show that  $f(x)$  is bounded *a.e.*

Chapt. 2, 1, 2, 3