Integration Theory

Kasper Rosenkrands

MATØK6

Spring 2020

1 Lebesque Integration Theory

(Chapter 2-5 of Bartle's book, the most important results are: monotone convergence theorem, Fatou's lemma and Lebesgue dominated convergence theorem)

4.6 - Monotone Convergence Thereom

Theorem 1.1 (Monotone Convergence Thereom)**.** *If (f_n) is a monotone increasing sequence of functions in $M^+(X, m)$ which converges to f, then*

$$\int f \, d\mu = \lim \int f_n \, d\mu. \tag{1.1}$$