

Math 562, Homework 4

Due 11/18

1. (Exercise IV.(1.27)(i) of [1]) If M and N are two independent continuous local martingales (i.e. the σ -fields $\sigma(M_s : s \geq 0)$ and $\sigma(N_s : s \geq 0)$ are independent), show that $\langle M, N \rangle = 0$.
2. (Exercise IV.(1.30)(i) of [1]) If S and T are stopping times which reduce M , show that $S \vee T$ also reduces M .
3. (Exercise IV.(1.30)(ii) of [1]) If M is a continuous local martingale, then the stopping times $S_k = \inf\{t : |M_t| \geq k\}$ reduce M .