Assignment 3

Below is the list of problems that I recommend that you do by the midterm (on November 4). I will not collect them, but will post some hints or solutions by October 27. All numbers refer to the fourth edition of "Probability: Theory and Examples".

- Exercises 2.2.1, 2.2.2, 2.2.6, 2.3.9, 2.3.16
- Missing proofs from Lecture 7
- Additional Exercise: Prove that if for $n \geq 1$, $S_n = \sum_{k=1}^{n} X_k$, then $\{\limsup \frac{S_n}{n} < c\}$ and $\{\lim \frac{S_n}{n} \text{ exists}\}$ are tail events. Prove also that $\{\forall n \geq 1, X_n = 0\}$ and $\{\lim S_n \text{ exists and is } < c\}$ are not.