

IEOR 8100: Topics in OR: Asymptotic Methods in Queueing Theory

Fall 2009, Professor Whitt

Class Lecture Notes: Monday, September 21.

some useful functions

Topics Covered

1. first motivating example: FCLT for the continuous-time workload in the $GI/GI/1$ model; applying the inverse and composition maps; see (2.4) and (2.5) on p. 290 and Theorem 9.3.4 on p. 297 of [W].
2. second motivating example: FCLT for waiting times in the $\sum GI_i/GI/1$ model, which has a superposition arrival process; applying inverse with centering more than once; see §9.4 of [W]
3. CLT for random sums; the composition map; §§3.4 and 3.5 of [W];
4. CLT for renewal processes and other counting processes; the inverse map; inverse with centering; §§7.3, 13.6 and 13.7 of [W]
5. CLT for renewal reward processes; composition plus centering; §§7.4 and 13.3 of [W].
(not done: left for next time)