

Homework 5

Part I (Reading): Example 5.4(C), 5.5(B),

Part II (Textbook Chapter 5): 5.4, 5.9, 5.10, 5.12, 5.13, 5.15, 5.19, 5.21, 5.22

Hint: (1) 5.12 (b): The total time that a CTMC $X(s)$ spends in the state i in the interval $[0, t]$ can be expressed as $\int_0^t I_{\{X(s)=i\}} ds$;

(2) 5.19: You may either condition on the first transition time or use Wald's equation.

Part III (Some problems in Chapter 5 with solutions given in the end of textbook): 5.3, 5.8, 5.23