Homework 8 -
Service Processes and Analysis of Customers' Patience.
Partial Solution.

Part 1

1. Given the survival function $S(t)$, the average service time could be calculated by the tail-formula

$$\mathrm{E}X \;=\; \int_0^\infty S(t)dt\ . \tag{1}$$

If only the hazard rate $h(t)$ is given then, first, calculate the survival function using

$$S(t) \;=\; e^{-\int_0^t h(u)du}\ ,$$

and, then, apply the previous formula for the average service time.