Practice

Q1. (Review of Probability A). X and Y are two independent random variables. X is a uniformly distributed in [0, 3], and Y is uniformly distributed in [3, 6]. Find the probability density function (PDF) of X + Y.

Q2. (Review of Probability B). T is a random variable that follows exponential distribution. The probability density function of T is

$$f(t) = \begin{cases} 0, t < 0 \\ \lambda e^{-\lambda t}, \text{otherwise} \end{cases}$$

Prove that P(T > a + b|T > a) = P(T > b)