The University of Melbourne
CVEN30008 Engineering Risk Analysis

Tutorial 5 Continuous Distribution

Quality Risk

1. **The lifetime of a battery in a certain application is normally distributed with mean $\mu = 16$ hours and standard deviation $\sigma = 2$ hours**
   a) **What is the probability that a battery will last more than 19 hours?**
   b) **What is the probability that the lifetime of a battery is between 14.5 and 17 hours?**
   c) **Verify your results by using Matlab**

2. **Based on lognormal distribution, repeat question 1**

3. **The strength of an aluminium alloy is normally distributed with mean 10 GPa and standard deviation 1.4 GPa.**

   (a) What is the probability that a specimen of this alloy will have strength greater than 12 GPa?

   (b) What is the probability that a specimen of this alloy will have strength smaller than 9 GPa?

   (c) Verify your results by using Matlab