Week 9 H.W.

BA2023, Statistics, MSE

1. Solve 3.10.1, 3.10.11, 3.11.4,3.11.16,3.11.17.

2. Suppose an isolated weather-reporting station has an electronic device whose time to failure is given by a Exponential$\left(\frac{1}{\theta}\right)$ random variable. The station also has a spare device, so the time until this instrument is not available is the sum of these two exponential random variables. Five data points have been collected:

   $$9.2, 5.6, 18.4, 12.1, 10.7.$$

   Find the maximum likelihood estimate for θ.

3. Solve Problems 5.2.6, and 5.2.9.