

Homework 15

Math 262

Write your solutions to the following problems and turn them in to the homework mailbox (RMS level 3, near the fireplace) by 4:00pm on **Wednesday, May 9**.

Book Problems

- Section 4.4 #76, 77, 79 (pages 286–289)
- Section 4.5 #85, 86, 91, 95, 99 (pages 300–302)

Additional Problems

1. Suppose that X is the random variable denoting the number of bacteria per cubic centimeter in water samples and that for a given location, X has a Poisson distribution with mean λ . But λ varies from location to location and has a gamma distribution with parameters α and β . Find expressions for $E(X)$ and $V(X)$ in terms of α and β .
2. Explain in your own words the difference between the Central Limit Theorem and the Law of Large Numbers.