

# Lab Report: Continuous Random Variable

Name(s):

## Key Terms

Provide the definitions for the following terms:

- continuous random variable
- uniform probability distribution
- exponential probability distribution
- probability distribution function
- cumulative distribution function

## Problems

Show your work.

1. Average Hourly Rate of a Student Job
  - a. Probability density function
  - b. Mean and standard deviation
  - c. Probability that a randomly chosen student job pays more than \$10
  - d. 95<sup>th</sup> percentile
  - e. Probability that a student job pays more than \$25 given that its hourly rate is more than \$10
  - f. Probability that a student job pays between \$10 and \$25
2. Decay of Uranium-232
  - a. Probability density function
  - b. Mean and standard deviation
  - c. Amount of Uranium-232 lasting less than 30 years
  - d. Amount of Uranium-232 lasting more than 70 years
  - e. Amount of Uranium-232 lasting between 30 and 70 years
  - f. Length of time when 80% of Uranium-232 has decayed