

# Calculus 131, Chapter 13 Summary ~ things you should know

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## Important concepts:

continuous random variables

probability density function

cumulative distribution function

expected value, variance and standard deviation of a continuous random variable

uniform probability density functions

exponential probability density functions

normal random variables

sampling distribution

## Be able to:

verify whether a function is a probability density function

use a probability density function to find probability over an interval

find  $E(X)$ ,  $\text{Var}(X)$  and standard deviation for a continuous random variable.

find  $E(X)$ ,  $\text{Var}(X)$ , standard deviation, and probabilities for a uniform probability distribution function.

find  $E(X)$ ,  $\text{Var}(X)$ , standard deviation, and probabilities for an exponential distribution function.

use the normal distribution table of values to find probabilities.

answer questions about probabilities involving sample means, given a population mean and standard deviation

answer questions about probabilities involving sample means, given a probability distribution or probability density function

## Review exercises from the text:

Chapter 13 Review Exercises, 4 – 11, 13 – 18, 20 – 29, 33 – 38, 40 (Answers to odd-numbered problems are in the back of the text.)

Central Limit Theorem supplement, 1 – 7