

Calculus 131, Chapter 12 Summary ~ things you should know

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Important concepts:

sets and set operations (union, intersection and complement)

cardinality of a set

addition-union principle

relative frequency

probability

tree diagram

multiplication principle

conditional probability

independent events

Bayes' Theorem

discrete random variable

expected value (mean, average), variance, standard deviation

decision tree

Be able to:

list the elements in the union, intersection and/or complement of given sets

use a Venn diagram to illustrate and answer questions about a set, union, intersection or complement

use the addition principle to determine the number of elements in a given union

use a tree diagram to determine the elements in a sample space

fill in a Venn diagram and answer questions, given a description which includes number of elements in various sets, unions and intersections

use the multiplication principle to determine the number of possible outcomes for a given situation

calculate conditional probabilities

use the two tests to determine whether or not two events are independent

use Bayes' Theorem to determine a conditional probability.

find the probability for a specific value or values $X = x$

find $E(X)$, $\text{Var}(X)$ and standard deviation for a given probability distribution

calculate expected values and compare outcomes, given a decision tree and associated probabilities

Review exercises from the text:

Chapter 12 Review Exercises, 1 – 23, 27 – 45 (Answers to odd-numbered problems are in the back of the text.)