

You may use one 3x5 card and one combination/permutation tool (a calculator or my combinations.py running on your laptop). 1 hour 20 minutes. There are 21 multiple choice questions worth 5 points each.

Remember to submit your homework!

6.1

Multiply rule

add rule

subtract rule

How many different bit strings of length n are there

Total – bad

6.3

Combinations

Permutations

How many bit strings of length n contain exactly r 1s?

6.4

$(x+y)^4$

What is the coefficient of $x^{12}y^{13}$ in the expansion of $(x + y)^{25}$?

6.5

Permutations with repetition. PR

Combinations with repetition, including restraints. CR

doughnut problem.

$x_1 + x_2 + \dots = 10$

Permutations with Indistinguishable Objects

DISTINGUISHABLE OBJECTS AND DISTINGUISHABLE BOXES

INDISTINGUISHABLE OBJECTS AND DISTINGUISHABLE BOXES

6.6

Generate next permutation

Generate next combination

7.1

Finite probability with equally likely outcomes (poker, lottery, complement and subtraction rules)

7.2

probability with unequal outcomes

conditional probability