

Test 3 – topics

Math 1165: Discrete Math

Test Date: Nov 26

Format:

- True/False, Matching, Multiple Choice
- Free Response
- You may be asked to show your work
- Calculators are allowed

Textbook sections: 3.2, 3.4 – 3.5, 4.1 – 4.7

- Questions will be similar to examples worked in class or homework questions

Topics:

- Counting
 - Permutations
 - Combinations
- Probability
 - Definition
 - Sample space
 - How to find
- Recurrence Relations
 - Fibonacci-like sequences
 - Characteristic equation
- Relations
 - Definition
 - Cartesian Product
 - Creating “new” relations from given ones
 - Reachability & connectivity
 - Properties
 - Reflexive/irreflexive, symmetric/asymmetric/anti-symmetric, transitive
 - Equivalence
 - Operations
 - Complementary
 - Reflexive closure
 - Symmetric closure
 - Transitive closure
 - composition
- Graphs and Digraphs
 - Definition & components (ie: vertices, edges)
 - Creating a digraph from a relation
 - Creating the matrix of the relation – either from the relation or the associated digraph
 - Interpreting properties of the relation off of the graph

Sample Questions:

Note: below is not an exhaustive list of possible questions. It is only a sample of some of the types of questions that you may see on the exam.

- For chapter 3 sample questions, see the study guide for test 2.
- For chapter 4 questions:
 - See the self-test on p177 of the textbook, specifically look at questions 1 – 16.
 - Section 4.7: #8
 - Section 4.5: #3
 - Section 4.3: #1-8
 - Section 4.1: #11