

Math 3120

Final Exam Review Chapters 3, 4, & 5

Memorize:

Know:

- $A \times B$, relation, domain, range, identity relation, inverse of a relation, composition of relations
- modular arithmetic
- partition
- function, image, preimage (inverse image), 1-1, onto, increasing, decreasing
- cardinalities of the empty set, N_k , N , R , $N \times N$, Q , $P(N)$, and $R \times R$
- equivalent sets

Topics:

Chapter 3

- relations
- equivalence relations
- modular arithmetic
- partitions

Chapter 4

- functions
- composition of functions
- finding the inverse of a function
- images and inverse images

Chapter 5

- cardinality
- equivalent sets

Extra Credit Review Problems (15 points, due when you take the final)

3.1: 3d, 5abc, 9a

3.2: 4g, 13

3.3: 2abc

4.1: 1bcdg, 3ei, 4ac, 6a, 110

4.2: 1c, 2c, 3dg, 13a, 14b

4.3: 1l, 2l, 3, 4, 6

4.4: 2ad, 7f

5.1: 4

Prove Theorem 5.2a page 223.

Prove Theorem 5.7c page 226.

5.2: 1d

5.4: 4, 8a, 12