

Math 199 Study Guide for Test 2

Study

notes, graded homework, and other homework

Definitions and Terminology To Know:

one-to-one

direct image (written $f(A)$)

inverse image (written $f^{-1}(B)$)

induction step

relation

symmetric relation

equivalence relation

quotient of X by R (written X/R)

pairwise disjoint

onto

image of f

d divides n (written $d|n$)

induction hypothesis

reflexive relation

transitive relation

equivalence class of x (written $[x]$)

partition

relation induced by P (written R_P)

Be Able To

state definitions

give examples and work examples

direct and inverse images

relations (reflexive, symmetric, transitive)

equivalence relations and partitions

state the Invertibility Theorem

state the Least Number Principle

state the Principle of Mathematical Induction

Types of Proof To Know

1 – 1 and onto

direct image (Know $y \in f(A) \iff y = f(x)$, for some $x \in A$)

inverse image (Know $x \in f^{-1}(B) \iff f(x) \in B$)

invertibility (using Invertibility Theorem)

induction (also starting at n_0)

Big Proofs To Know

Invertibility Theorem

Principle of Math Induction (using Least Number Principle)