

MTH 311 Test #2

For this test, you should be able to do the following:

- Give a precise and complete definition for each of the following terms:
 - Subset, proper subset, and set equality
 - Union, intersection, difference, and complement of sets
 - Disjoint sets, pairwise disjoint sets, partition
 - Power set, Cartesian product
- Apply your understanding of these terms by giving examples and counterexamples.
- Draw Venn diagrams that accommodate given information.
- Use element arguments (“element chasing”) to prove set results.
 - Prove a subset relation by choosing a generic particular element from the contained set and proving it is in the containing set.
 - Prove a set equality relation using double-containment – proving each set is a subset of the other.
 - Prove a set is empty by a contradiction – assuming the set is not empty and obtaining a contradiction.
- Use “set algebra” type proofs to verify set results.