

Math 532: Homework 2

Prove the following:

Theorem 1. *Each point in a finite projective plane of order n has exactly $n + 1$ lines passing through it.*

Theorem 2. *In a finite projective plane of order n , each line has exactly $n + 1$ points on it.*

Theorem 3. *A finite projective plane of order n contains exactly $n^2 + n + 1$ points and exactly $n^2 + n + 1$ lines.*