

NAP 2019, CLASS #5, MAY 13, 2019

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- In Chapter 3 (Rings) section 3.4, we reviewed integral domains, irreducible, defined associates, primes (a new definition!!), ACCPI, unique factorization domain (UFD).
- We proved Theorem 3.5: In an integral domain, every prime element is irreducible. We remarked that in $\mathbb{Z}[\sqrt{-5}]$ there are irreducible elements that are not prime in this new sense.
- We proved Theorem 3.6: For R an integral domain, R is a UFD $\iff R$ has ACCPI and every irreducible is prime.
- We started section 3.5 on PIDs (Principal ideal domains). Began to discuss the Division Algorithm for Theorem that says $K[x]$ satisfies the Division Algorithm, if K is a field.