

Math 525 — Quiz 06 – September 20, 2023

Name: _____

1. Complete the statement the main theorem of Section 8.3: Every Principal Ideal Domain is a ...

2. (This is a “fuzzy” question—try to answer as best you can.) In the proof of the main theorem of Section 8.3, we have to prove that the process of factoring “stops” at some point. How is this proven?

3. Complete the following definition: An nonzero, non-unit element r in an integral domain R is *irreducible* if ...

4. Complete the following definition: An nonzero, non-unit element r in an integral domain R is *prime* if ...

5. Prove that in an integral domain R , a prime element is always irreducible.