Consider $\mathbb{Z}_6 \cong \mathbb{Z}/6\mathbb{Z}$. In $\mathbb{Z}_6$ divisors of zero are 2, 3, 4, 5. Now if we consider $\mathbb{Z}_5$, then we see that there is no zero divisors of it. Hence we can conclude that if n is a prime, then $\mathbb{Z}_n$ has no divisors of 0.

Recall that an integral domain is a commutative ring with unity 1 and containing no divisors of 0. Thus if n is a prime , then $\mathbb{Z}_n$ is an integral domain. Also we know that every finite integral domain is a field. So we can conclude that if n is a prime, then $\mathbb{Z}_n$ is a field.