

Math 629-Homework (Spring 2015) # 3 – Due Monday, March 16

Hand-in (from Rotman)

1. Let $R = \mathbb{Z}/p^n\mathbb{Z}$, where p is a prime number. Show that R is injective as a module over itself.

Section 3.3: 3.31(i),(ii), 3.39.

5. Let R be an integral domain. Show that an ideal I of R is projective as an R -module if and only if it is invertible (as defined in Kaplansky). You will want to come to the Wednesday class just before the break to see some discussion of this.

Additional Problems

Section 3.3: 3.29, 3.38, 3.34.