

Name _____

Mathematics 309a: Abstract Algebra

Winter Semester 2009

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Quiz #13

March 26

Definition. An element a in a ring is an **idempotent** if $a^2 = a$.

A. Find all the idempotents in the ring \mathbb{Z}_7 .

B. Find all the idempotents in the ring \mathbb{Z}_{12} .

C. Find all solutions of the equation $x^2 = x$ in the ring \mathbb{Z}_{12} .