

Axiom: $a+x=0$ has a solution

Theorem: $a+x=0$ in a ring has a
3.3 unique solution

↳ one and only one

Proof: By ring axiom 5

$a+x=0$ has a solution

Suppose $a+b=0$ and $a+c=0$

$$c+(a+b) = c+0 = c$$

Ax 4

$$c+(a+b) = (c+a)+b = (a+c)+b$$

Ax 2 Ax 3

$$= 0+b = b$$

Ax 4

↳ So $c=b$

★ ~~Let~~ $-a$ be the unique ★
additive inverse of a .

definition of $-a$