# Commutative rings

# Definition

Let $A$ be a ring. It is called a commutative ring if $(A, \cdot)$ is a commutative monoid.

# Example

The set of integers is a commutative ring.

# Example

Let $A$ be any commutative ring. Let $x$ be an indeterminate. Then, the set

$$A[x]$$

of polynomials in $x$ with coefficients in $A$ is a commutative ring.

Let $M$ be an abelian group. Let $\text{End}(M)$ be the ring of endomorphisms of $M$. Is in commutative in general?