

SUBRINGS

Definition

Let $(R, +, \cdot)$ be a ring. A ring $(S, +, \cdot)$ is a subring of $(R, +, \cdot)$ if $S \subset R$.

Verification

If $(R, +, \cdot)$ and $S \subset R$, then + is associative and commutative on S because it is on R. Likewise \cdot is associative on S and + and \cdot distribute over each on S because they do on R. So we have restricted the number of conditions to check, and arrive at our first statement of sufficient conditions on S that ensure $(S, +, \cdot)$ is a ring.

