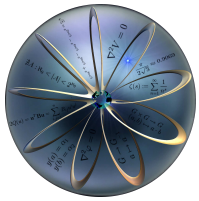

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radical

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Let $\mathfrak{g}$ be a Lie algebra. Since the sum of any two solvable ideals of $\mathfrak{g}$ is in turn solvable, there is a unique maximal solvable ideal of any Lie algebra. This ideal is called the radical of $\mathfrak{g}$. Note that $\mathfrak{g}/\operatorname{rad}\mathfrak{g}$ has no solvable ideals, and is thus semi-simple. Thus, every Lie algebra is an `http://planetmath.org/Extension`extension of a semi-simple algebra by a solvable one.