semiprimitive ring

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Synonym	semisimple ring
Synonym	Jacobson semisimple ring
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Related topic	SemisimpleRing2
Related topic	WedderburnArtinTheorem
Defines	semiprimitivity
Defines	semiprimitive
Defines	semisimple
Defines	Jacobson semisimple
Defines	J-semisimple
Defines	semi-primitivity
Defines	semi-primitive
Defines	semi-simple
Defines	Jacobson semi-simple
Defines	J-semi-simple

A ring is said to be *semiprimitive* if its Jacobson radical is the zero ideal.

Any simple ring is automatically semiprimitive.

A finite direct product of matrix rings over division rings can be shown to be semiprimitive and both left and right Artinian.

The `http://planetmath.org/WedderburnArtinTheorem`Artin-Wedderburn Theorem states that any semiprimitive ring which is left or right Artinian is isomorphic to a finite direct product of matrix rings over division rings.

Note: The semiprimitive condition is sometimes also referred to as a *semisimple*, *Jacobson semisimple*, or *J-semisimple*. Furthermore, when either of the last two names are used, the adjective 'semisimple' is frequently intended to refer to a ring that is semiprimitive and Artinian (see the entry on `http://planetmath.org/SemisimpleRing2`semisimple rings).