# properties of semisimple modules

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Let $R$ be a ring. Recall that $R$-module $M$ is called *semisimple* iff $M$ is a direct sum of simple module.

**Proposition.** The following are equivalent for $R$-module $M$:

1. $M$ is semisimple;

2. $M$ is generated by its simple submodules;

3. for every submodule $N \subseteq M$ there exists a submodule $N' \subseteq M$ such that $M = N \oplus N'$.