semigroup with involution

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Defines	involution
Defines	semigroup with involution
Defines	monoid with involution

An *involution* on a semigroup S [on a monoid M] is a unary operation $x \mapsto x^*$ defined on S [resp. on M] such that for each $x, y \in S$ [resp. for each $x, y \in M$]

$$(x^*)^* = x, \quad (xy)^* = y^* x^*.$$

With this added internal operation, the semigroup S [resp. the monoid M] becomes a *semigroup with involution* or *$*$-semigroup* [resp. a *monoid with involution* or *$*$-monoid*].

References

[1] J.M. Howie, *Fundamentals of Semigroup Theory*, Oxford University Press, Oxford, 1991.