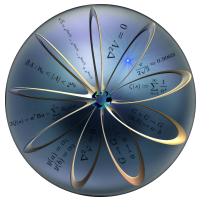

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factors with minus sign

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The sign (cf. plus sign, opposite number) rule

$$(+a)(-b) = -(ab), \tag{1}$$

derived in the `http://planetmath.org/productofnegativenumbers`parent entry and concerning numbers and elements a, b of an arbitrary ring, may be generalised to the following

Theorem. If the sign of one `http://planetmath.org/Product`factor in a ring product is changed, the sign of the product changes.

Corollary 1. The product of real numbers is equal to the product of their absolute values equipped with the "$-$" sign if the number of negative factors is odd and with "$+$" sign if it is even. Especially, any odd power of a negative real number is negative and any even power of it is positive.

Corollary 2. Let us consider natural powers of a ring element. If one changes the sign of the base, then an odd power changes its sign but an even power remains unchanged:

$$(-a)^{2n+1} = -a^{2n+1}, \quad (-a)^{2n} = a^{2n} \qquad (n \in \mathbb{N})$$