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quadratic algebra

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A non-associative algebra A (with unity 1_A) over a commutative ring R (with unity 1_R) is called a *quadratic algebra* if A admits a quadratic form $Q: A \rightarrow R$ such that

1. $Q(1_A) = 1_R$,
2. the quadratic equation $x^2 - b(1_A, x)x + Q(x)1_A = 0$ is satisfied by all $x \in A$, where b is the associated symmetric bilinear form given by $b(x, y) := Q(x + y) - Q(x) - Q(y)$.