A NEW IDENTITY IN LATTICES

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In this note we introduce a new identity in lattices. Let \( L \) be a lattice. If for \( a \in L \) we have 
\[
(a + b)(a + c)(a + d)(a + e) = a + bcd(a + e) + bde(a + c) + bce(a + d) + dce(a + b)
\]
for all elements \( b, c, d, e \) in \( L \), we call \( a \) the \( N \)-element of \( L \). If every element of \( L \) is an \( N \)-element of \( L \), then we call \( L \) a \( N \)-lattice. Here we study and characterize \( N \)-lattices.