

1056-12-257

Steven H. Weintraub* (shw2@lehigh.edu), Dept. of Mathematics, Lehigh Univ., Bethlehem, PA 18015-3174. *Observations on Primitive, Normal, and Subnormal Elements of Field Extensions.*

Let \mathbf{B}_1 and \mathbf{B}_2 be disjoint separable algebraic extensions of a field \mathbf{F} , and let $\mathbf{B} = \mathbf{B}_1\mathbf{B}_2$ be their composite. Let α_1 be an element of \mathbf{B}_1 and α_2 be an element of \mathbf{B}_2 . Suppose α_1 and α_2 are primitive (resp. normal, resp. subnormal). We investigate the question of when $\alpha_1 + \alpha_2$ and $\alpha_1\alpha_2$ are necessarily primitive (resp. normal, resp. subnormal) elements of \mathbf{B} . (A normal element of a Galois extension is defined to be one that is part of a normal basis, and a subnormal element is defined analogously for a non-Galois extension.) (Received August 25, 2009)