Exposé court

81 *Some degree problems in number fields*

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We say that a triplet (a, b, c) of positive integers is product-feasible if there exist algebraic numbers α, β and γ of degrees (over $\mathbb{Q}$) a, b and c, respectively, such that $\alpha\beta\gamma = 1$. An analogous notion has been introduced for number fields, too. Namely, a triplet $(a, b, c) \in \mathbb{N}^3$ is said to be compositum-feasible if there exist number fields K and L of degrees a and b (over $\mathbb{Q}$), respectively, such that the degree of their compositum KL is c. We extend the investigation of compositum-feasible and product-feasible triplets started by Drungilas, Dubickas and Smyth. More precisely, for all positive integer triplets (a, b, c) with $a \le b \le c$ and $b \in \{8, 9\}$, we decide whether it is compositum-feasible. Moreover, we determine all but one product-feasible triplets $(a, b, c) \in \mathbb{N}^3$ satisfying $a \le b \le c$ and $b \le 7$.