A left invariant pseudometric d on $GL(n,\mathbb{R})$ is called norm-like if there is a norm $\|\cdot\|$ on $\mathbb{R}^n$ such that the functions $(t_1,\ldots,t_n) \longmapsto \|(t_1,\ldots,t_n)\|$ and $(t_1,\ldots,t_n) \longmapsto d(1, \operatorname{diag}(e^{t_1},\ldots,e^{t_n}))$ on $\mathbb{R}^n$ are of bounded difference. Here $\operatorname{diag}(s_1,\ldots,s_n)$ denotes the diagonal matrix with diagonal entries $(s_1,\ldots,s_n)$. Examples of norm-like pseudometrics are the pseudometric coming from the operator norm on $GL(n,\mathbb{R})$ given by any norm on $\mathbb{R}^n$ and the pseudometric coming from the symmetric space. A recent result of Margulis and Abels says that every coarsely geodesic pseudometric (e.g. the word metric with respect to a compact set of generators) on $GL(n,\mathbb{R})$ is norm-like. An analogous result holds for reductive groups over local fields. This research was motivated by a question that Siegel asked in 1959 in his Japan lectures on reduction theory.