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Newton's interpolation formula in study of multivariate functions

We discuss the use of Newton's interpolation formula, i.e., divided differences, in the following studies of multivariate functions:

1. Finite sum representations of some multivariate functions, e.g. the Lauricella function F_D .
2. Explicit constructions of multivariate Padé approximants for pseudo-multivariate functions.
3. Arithmetical results on certain multivariate power series, i.e., the proof of the irrationality and transcendence of some multivariate power series.