

## ASYMPTOTIC BEHAVIOR OF INTERMEDIATE POINTS IN CERTAIN MEAN VALUE THEOREMS

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*Abstract.* The paper deals with asymptotic behavior of intermediate points in certain mean value theorems: the Cauchy–Taylor mean value theorem, a generalization due to I. Pawlikowska of Flett’s mean value theorem, and a Cauchy version of Pawlikowska’s mean value theorem.

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### REFERENCES

- [1] U. ABEL, *On the Lagrange remainder of the Taylor formula*, Amer. Math. Monthly, **110** (2003), 627–633.
- [2] U. ABEL AND M. IVAN, *The differential mean value of divided differences*, J. Math. Anal. Appl. **325** (2007), 560–570.
- [3] U. ABEL, M. IVAN AND T. RIEDEL, *The mean value theorem of Flett and divided differences*, J. Math. Anal. Appl. **295** (2004), 1–9.
- [4] A. G. AZPEITIA, *On the Lagrange remainder of the Taylor formula*, Amer. Math. Monthly **89** (1982), 311–312.
- [5] L. COMTET, *Advanced Combinatorics*, Reidel, Dordrecht, 1974.
- [6] D. I. DUCA AND O. POP, *On the intermediate point in Cauchy’s mean-value theorem*, Math. Inequal. Appl. **9** (2006), 375–389.
- [7] T. M. FLETT, *A mean value theorem*, Math. Gazette **42** (1958), 38–39.
- [8] I. PAWLIKOWSKA, *An extension of a theorem of Flett*, Demonstratio Math. **32** (1999), 281–286.
- [9] R. C. POWERS, T. RIEDEL AND P. K. SAHOO, *Limit properties of differential mean values*, J. Math. Anal. Appl. **227** (1998), 216–226.
- [10] P. K. SAHOO AND T. RIEDEL, *Mean Value Theorems and Functional Equations*, World Scientific, River Edge, NJ, 1998.