

LOCATION OF THE ZEROS OF TRINOMIALS AND QUADRINOMIALS

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Abstract. In this paper, we prove certain results concerning the location of the zeros of quadrinomials, which in particular considerably improves a result due to Landau. We also present a very simple proof of a known result for trinomials, which provides a refinement of another result of Landau.

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REFERENCES

- [1] Y. J. AHN AND S.-H. KIM, *Zeros of certain trinomials equations*, Math. Inequal. Appl., **9**, 2 (2006), 225–232.
- [2] L. FEJÉR, *Über kreisgebiete, in denen eine Wurzel einer algebraischen Gleichung liegt*, Jber. Deutsch. Math. Verein., **26**, (1917), 114–128.
- [3] H. FELL, *The geometry of zeros of trinomials equations*, Rend. Circ. Mat. Palermo, **29**, 2 (1980), 303–336.
- [4] A. JOYAL, G. LABELLE AND Q. I. RAHMAN, *On the location of zeros of polynomials*, Canad. Math. Bull., **10** (1967), 53–63.
- [5] E. LANDAU, *Über den Picardschen Satz*, Vierteljahrsschrift Naturforsch. Gesellschaft Zürich, **51**, (1906), 252–318.
- [6] E. LANDAU, *Sur quelques généralisations du théorème de M. Picard*, Ann. École Norm, (3) **24**, (1907), 179–201.
- [7] M. MARDEN, *Geometry of polynomials*, Math. Surveys, No. 3, Amer. Math. Soc. Providence, RI 1985.
- [8] Q. I. RAHMAN AND G. SCHMEISSER, *Analytic Theory of Polynomials*, Oxford University Press, New York, 2002.