

**MR2539701 (Review)** 11R29 (11R09)

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**The Rabinowitsch-Mollin-Williams theorem revisited. (English summary)**

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This paper is devoted to the classification of Rabinowitsch polynomials  $(x^2 + x - \Delta + 1)/4$  [ cf. D. Byeon and H. M. Stark, *J. Number Theory* **99** (2003), no. 1, 219–221; [MR1957253 \(2003m:11176\)](#)]. The author considers the relevant case  $\Delta \equiv 1 \pmod{4}$ . In an updated Rabinowitsch–Mollin–Williams theorem there are established necessary and sufficient conditions having  $|x^2 + x - m|$  to be 1 or a prime for all  $x \in [1, \sqrt{m}]$ ,  $m \neq 2$ . This follows from appropriate results. For example it is proved that one has  $\Delta = n^2 - 4$  for some  $n \in \mathbb{N}$ ,  $h_\Delta = 1$  only for  $\Delta \in \{5, 21, 77, 437\}$ . The author gives appropriate lists for Rabinowitsch polynomials.

Reviewed by [Doru Ștefănescu](#)

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