We study the size of lemniscates for polynomials with all roots on the real line. For the class of polynomials of degree \( n \) with only real roots and a fixed value at a point off the real line, we solve the problem of maximizing the value of discriminant. There are two explicit families of polynomials that turn out to be extremal in terms of this problem. The first family has a particularly simple expression as a linear combination of \( n \)-th powers of two linear functions. The second family is related to generalized Jacobi polynomials, which helps us to find the associated discriminants explicitly. Our results have applications to some questions of Erdős about the largest disks contained in polynomial lemniscates, and to the minimum energy problems for discrete charges on the real line. This is joint work with Artūras Dubickas (Vilnius University). (Received September 01, 2019)