Problem of the Week

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Let $n > 0$ be a natural number. Determine all n-degree polynomials $P(x)$ with n positive real roots such that

$$P(x) = x^n + a_{n-1}x^{n-1} + a_{n-2}x^{n-2} + \cdots + a_2 x^2 + a_1 x + 1,$$

and $a_1 = a_{n-1} = n - 10.$