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Distributions of Right Prime Truncations

In this talk, we study the number of right prime truncations of an integer with at most ℓ digits when written in an arbitrary base b; that is, how many primes we obtain when successively deleting its rightmost digit. We also study the analogous problem in the polynomial ring $\mathbb{F}_q[T]$, when the polynomials are written in an arbitrary base b of degree m. For integers, we estimate the mean as b or ℓ grows and the variance as b grows. For polynomials, we estimate the mean as q, m, or ℓ grows and the variance as q or m grows. We prove that the Riemann Hypothesis implies that, for each fixed ℓ, every sufficiently large b admits an ℓ-digit integer whose right truncations are all prime, and give asymptotics for how many there are. We also prove an analogous result for polynomials. This is a work in progress.