# Entropy modulo a prime

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As an illustration of the algebraic, axiomatic view of entropy, I will explain a curiosity: the entropy of probability distributions where the "probabilities" are not real numbers but integers modulo a prime $p$. The entropy, too, is an integer mod $p$. This entropy, introduced by Kontsevich, has a functional form quite different from ordinary entropy, but there is compelling evidence that it is the right definition. I will explain as much as possible, although limited by the central, unsolved mystery: what does entropy modulo a prime actually mean?