Proofs in Three Bits or Less

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Let $Y = f(X_1, \dots, X_N)$ be a function of many independent random variables. The principle of *invariance* says that if N is large, and f is 'regular', then $\mathbf{E}[Y]$ will depend very little on the finer properties of the distribution of the random variables $X_1, \dots, X_N$. This allows us to switch between different distributions when the situation is more convenient (i.e. we may assume $X_1, \dots, X_N$ are Boolean random variables, or Gaussian random variables, since changing distributions will not drastically effect the value $\mathbf{E}[Y]$).

This is a talk about *anticoncentration*, which is a useful property when proving that