

A simple computation of $\zeta(2k)$

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We present a new simple proof of Euler's formulas for $\zeta(2k)$, where $k = 1, 2, 3, \dots$. The computation is done using only the defining properties of the Bernoulli polynomials and summing a telescoping series, and the same method also yields integral formulas for $\zeta(2k + 1)$.

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