You Don't Have To Be an Einstein to Figure Out that Sara Should (Asymptotically) Eat $\frac{n}{3}+\frac{4}{27}+O(1/n)$ Dove Bars, But you do Need to be an Ekhad (or any of its silicon brethren) to Figure Out that She Should Eat (Asymptotically) $\frac{n}{3}+\frac{4}{27}+\frac{1}{81n}+\frac{5}{729n^2}+\frac{23}{6561n^3}+\frac{1}{6561n^4}-\frac{281}{59049n^5}-\frac{5855}{531441n^6}-\frac{18691}{1594323n^7}+\frac{245947}{14348907n^8}+\frac{15502093}{129140163n^9}+\frac{106690105}{387420489n^{10}}+O(\frac{1}{n^{11}})$ Dove Bars

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First download the Maple package: http://www.math.rutgers.edu/~zeilberg/tokhniot/AsyRec .
Then, go into maple, and type:

read AsyRec:

expand(Asy(SumTools[Hypergeometric][Zeilberger]((k*binomial(n+k,k)*binomial(n,n-2*k)+ k*binomial(n+k-1,k-1)*binomial(n,n-2*k+1))/binomial(2*n,n),n,k,N)[1],n,N,10)/3);

and you would get the answer in the title, that improves from $O(1/n)$ to $O(1/n^{11})$ the asymptotic formula, derived by clever (human) arguments by D.M. Einstein, C.C. Heckman, and T.S. Norfolk (*Amer. Math. Monthly* **116** (2009), 831-835). Of course, with a few more seconds of computations, you can get $O(1/n^{30})$ and beyond, but do you really care? Sara would get a terrible tummy ache way before even the $O(1/n^{11})$ asymptotics will start to be useful (and probably even before the original, humanly-derived, $O(1/n)$ asymptotics).

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