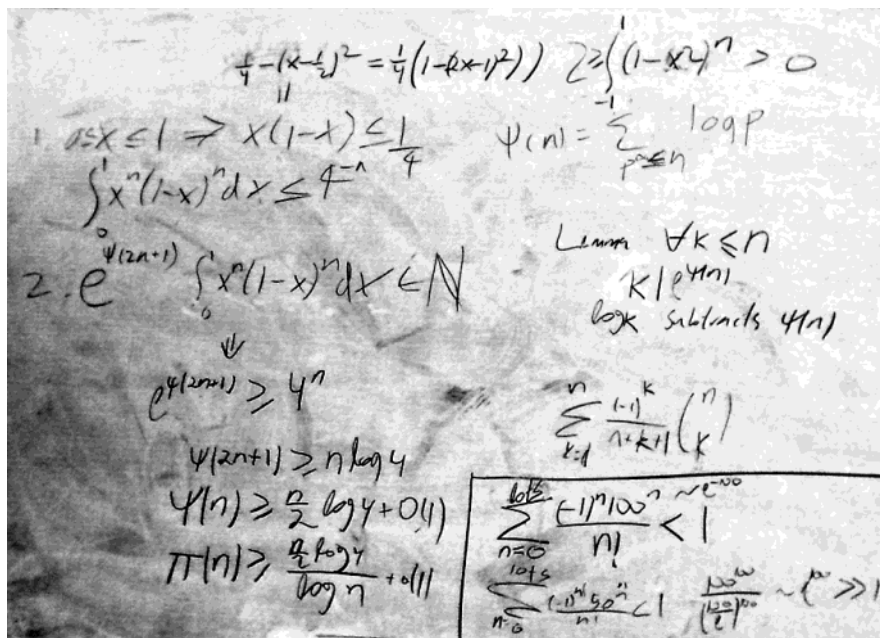


The Density of the Primes

May-08-11
9:35 AM

<http://katlas.math.toronto.edu/drorbn/bbs/show?shot=Friday-110506-184343.jpg>



The only use of $x^n(1-x)^n$ was:

"a positive polynomial of degree $2n+1$, integer coeffs, and low upper bound".

Question. Is it the best?

$$\frac{a}{p} + \frac{b}{q} = \frac{aq + bp}{pq} \text{ can be made to be } \frac{1}{pq}$$

Even better, Q. What is the smallest non-zero integral linear combination of $\left\{ \frac{1}{k} \right\}_{k=1}^n$?

Ans. clearly, $\frac{1}{lcm}$. This is what we are trying to bound from above.