# ABOUT THE DISTRIBUTION FUNCTION OF THE PRIME NUMBERS

**Abstract.** In this article we establish a new formula for $\Pi(x)=\sum_{\substack{p\le x\\ p\ prime}}1$, the number of primes not greater then x:

$$\Pi(x)=1-\sum_{n=3}^{[x]}\left[(-1)^{\lfloor\sqrt{n}\rfloor+1}\cdot P_n\right] \qquad (x\ge 3)$$

where $P_n=\prod_{k=2}^{n-1}\sin\frac{n\pi}{k}$ and $[\ ]$ denotes integer part.

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