

Rational approximations to values of the Gamma function at rational points

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Abstract

I will show how to obtain sequences of rational approximations that rapidly converge to any value $\Gamma(a/b)$, $a/b \in \mathbb{Q} \setminus \mathbb{Z}$ by means of Padé approximants applied to divergent power series similar to Euler's series $\sum_{n=0}^{\infty} n!x^n$. A similar method enables me to obtain rational approximations to any of the numbers $\gamma + \log(x)$, where γ is Euler's constant and $x \in \mathbb{Q}$, $x > 0$.

References

- [1] T. Rivoal, *Rational approximations for values of derivatives of the Gamma function*, 37 pages, to appear in the Transactions of the AMS.
- [2] T. Rivoal, *Approximations rationnelles des valeurs de la fonction Gamma aux rationnels*, 13 pages, submitted.