

Proposal: The Factorial Function

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It would not be a stretch to categorize my work under the topics in my 3 previous blog posts and this one. I talk about the Stirling formula:

$$n! \approx \sqrt{2\pi e} \left(\frac{n}{e}\right)^n$$

Think about it. If you don't know much math, there are only so many starting points. So no matter how complicated our analysis gets, there should only be a few principles at play.

Here we can get away with just the trapezoid rule:

$$\log n! = \log 1 + \log 2 + \cdots + \log n$$

$$\approx \int_1^n \log x \, dx = n \log n - n$$

The goal of this project is to state and make towards specific conjectures, built from these.

This concludes my proposals for the Spring.

References

- (1) **Wikipedia** "Factorial Function" <https://en.wikipedia.org/wiki/Factorial>