

FINDING THE DERIVATIVE OF POLYNOMIALS VIA DOUBLE LIMIT

PETRO KOLOSOV

ABSTRACT.

CONTENTS

1. Introduction	1
2. Conclusions	3
References	3

1. INTRODUCTION

Your introduction here. Include some references [1, 2, 3, 4, 5, 6]. Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Figure example

Date: January 26, 2024.

2010 *Mathematics Subject Classification.* 26E70, 05A30.

Key words and phrases. Polynomials, Limits, Binomial theorem, Binomial expansion, Derivative, Differentiation, Polynomial identities .

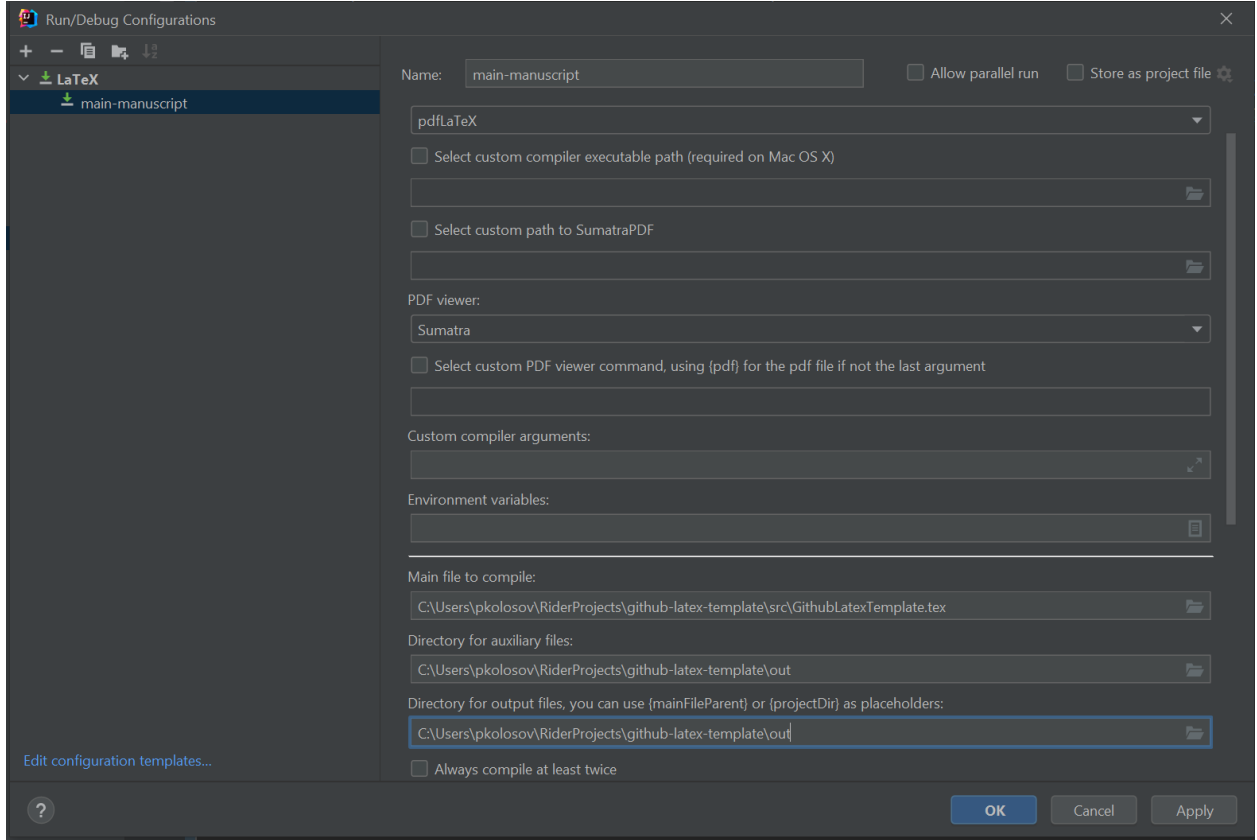


Figure 1. Figure example.

$$\prod_m \begin{matrix} a \\ b \end{matrix}$$

And for any natural m we have polynomial identity

$$x^m = \sum_{k=1}^m T(m, k) x^{[k]} \quad (1.1)$$

where $x^{[k]}$ denotes central factorial defined by

$$x^{[n]} = x \left(x + \frac{n}{2} - 1 \right)^{n-1}$$

where $(n)^k = n(n-1)(n-2)\cdots(n-k+1)$ denotes falling factorial in Knuth's notation. In particular,

$$x^{[n]} = x \left(x + \frac{n}{2} - 1\right) \left(x + \frac{n}{2} - 1\right) \cdots \left(x + \frac{n}{2} - n + 1\right) = x \prod_{k=1}^{n-1} \left(x + \frac{n}{2} - k\right)$$

2. CONCLUSIONS

Conclusions of your manuscript.

REFERENCES

- [1] Benaoumeur Bayour, Ahmed Hammoudi, and Delfim FM Torres. A truly conformable calculus on time scales. *arXiv preprint arXiv:1705.08928*, 2017. <https://arxiv.org/abs/1705.08928>.
- [2] Nadia Benkhettou, Salima Hassani, and Delfim FM Torres. A conformable fractional calculus on arbitrary time scales. *Journal of King Saud University-Science*, 28(1):93–98, 2016.
- [3] M Cristina Caputo. Time scales: from nabla calculus to delta calculus and vice versa via duality. *arXiv preprint arXiv:0910.0085*, 2009.
- [4] Nat á lia Martins and Delfim FM Torres. Calculus of variations on time scales with nabla derivatives. *Nonlinear Analysis: Theory, Methods & Applications*, 71(12):e763–e773, 2009.
- [5] Petro Kolosov. "Github Template" Source files. Available electronically at <https://github.com/kolosovpetro/github-latex-template>, 2022.
- [6] N. J. A. Sloane. The on-line encyclopedia of integer sequences. published electronically at <https://oeis.org>, 1964.

Version: Local-0.1.0

SOFTWARE DEVELOPER, DEVOPS ENGINEER

Email address: kolosovp94@gmail.com

URL: <https://kolosovpetro.github.io>