

# LATEX TEMPLATE FOR GITHUB

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ABSTRACT. Your abstract here.

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## 1. INTRODUCTION

Your introduction here. Include some references [1, 2, 3]. 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

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recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

### Image example

The screenshot shows the Rider IDE interface. On the left is the 'File System' tree view, which includes a 'src' folder containing 'sections', 'Build-Latex.ps1', 'Initialize-Workspace.ps1', 'unexpected-polynomial-identities-classical-interpolation.bb', and 'unexpected-polynomial-identities-classical-interpolation.tex'. The main window displays the LaTeX file 'unexpected-polynomial-identities-classical-interpolation.tex' with several lines of code related to document classes, packages, and mathematical commands. Below the code editor is the 'Run' tab, which shows a successful build process with an exit code of 0. The status bar at the bottom indicates the file path 'unexpected-polynomial-identities-classical-interpolation > src > unexpected-polynomial-identities-classical-interpolation.tex' and the time '12:22'.

**Figure 1.** Image example.

$m/r$	0	1	2	3	4	5	6	7
0	1							
1	1	6						
2	1	0	30					
3	1	-14	0	140				
4	1	-120	0	0	630			
5	1	-1386	660	0	0	2772		
6	1	-21840	18018	0	0	0	12012	
7	1	-450054	491400	-60060	0	0	0	51480

**Table 1.** Coefficients  $\mathbf{A}_{m,r}$ . See OEIS sequences [4, 5].

$$\begin{array}{c} \left[ \begin{array}{c} a \\ b \end{array} \right]_m \\ \left[ \begin{array}{c} a \\ b \end{array} \right]_m \end{array}$$

And for any natural  $m$  we have polynomial identity

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

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

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

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

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

This is an equation reference (1).

Continuing similarly, we are able to derive the formula for multifold sums of powers, which is

**Theorem 1.1** (Multifold sums of powers via Newton's series). *For non-negative integers  $r, n, m$  and an arbitrary integer  $t$*

$$\sum^r n^m = \sum_{j=0}^m \Delta^j t^m \left[ \left( \sum_{s=1}^r (-1)^{j+s-1} \binom{j+t-1}{j+s} \Sigma^{r-s} n^0 \right) + \binom{n-t+r}{j+r} \right]$$

*Proof.* By Newton's series for power and repeated applications of the segmented hockey stick identity.  $\square$

## CONCLUSIONS

Conclusions of your manuscript.

Here is an itemize list with adjusted margins

- Conclusion 1 ....

- Conclusion 2 ....

- Conclusion 3 ....

Total derivative:  $\frac{dy}{dx}$

$$\frac{dy}{dx}$$

Partial derivative:  $\frac{\partial f}{\partial x}$

Second total derivative:  $\frac{d^2y}{dx^2}$

Mixed partial:  $\frac{\partial^2 f}{\partial x \partial y}$

#### ACKNOWLEDGEMENTS

The author is grateful to [Full Name] for his valuable contribution [contribution] about the fact that [interesting claim].

#### REFERENCES

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**Sources:** [github.com/kolosovpetro/github-latex-template](https://github.com/kolosovpetro/github-latex-template)

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