

Introduction to L^AT_EX

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1 LAB 1

The solutions to lab assignment 1

$$C(n, r) = n!/r!(n - r)!$$

The following is in-line $a + b = c - d = xy = w/z$ and following is displayed mathematical text

$$a + b = c - d = xy = w/z$$

$$\alpha\beta = \gamma + \delta \tag{1}$$

$$\Gamma(n) = (n - 1)! \tag{2}$$

If $Y_{rc}, r = 1, \dots, R, c = 1, \dots, C$ are random variables, show that

2 Lists

Here is the ...

1. You can mix list environments as much as you like

- But it might start to look silly
 - With different symbols

2. So do remember

Stupid things will not become smart because they are in a list

Smart things, though, can be presented beautifully in a list

3 Mathematical symbols

What are the points where $\frac{\delta}{\delta x}f(x, y) = \frac{\delta}{\delta y}f(x, y) = 0$?

$$\nabla^2 f(x, y) = \frac{\delta^2 f}{\delta^2 x} + \frac{\delta^2 f}{\delta^2 y}$$

This is a matrix

$$\begin{bmatrix} aa & \cdots & az \\ \vdots & \ddots & \vdots \\ za & \cdots & zz \end{bmatrix}$$

4 Other mathematical symbols

$$\int \csc^2 x \, dx = -\cot x + C \qquad \lim_{\alpha \rightarrow 0} \frac{\sin \alpha}{\alpha} = 1$$

$$h_i(t) = \lim_{\epsilon \rightarrow 0} \frac{1}{\epsilon} \frac{P(t < T_i \leq t + \epsilon)}{P(T_i > t)}$$

5 Question 37

The universe is immense and it seems to be homogeneous, in a large scale, everywhere we look at.

There's a picture of a galaxy above

This example shows some instances of using the `xcolor` package to change the colour of elements in L^AT_EX.

- First item
- Second item

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- First item
 - Second item

The background colour of text can also be `easily` set. For instance, you can change use an `orange background` and then continue typing.

L^AT_EX [?] is a set of macros built atop T_EX [?].

References

- [1] Donald E. Knuth (1986) *The T_EX Book*, Addison-Wesley Professional.
- [2] Leslie Lamport (1994) *L^AT_EX: a document preparation system*, Addison Wesley, Massachusetts, 2nd ed.