Integration of MathJax in R: A Step-by-Step Guide

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0.1 Introduction

This guide provides step-by-step instructions on how to integrate MathJax and include mathematical formulas in your R code. Follow these instructions to enhance your R projects with mathematical expressions.

0.2 Steps

1. Include MathJax Library:

```
birthdayUI <- function(id) {
  ns <- NS(id)

  fluidPage(
    # for coloring probability_text and guess_text
    tags$head(
      tags$style(HTML(".sec-prob {color: darkblue}.instruction {color: red;}.first-answer {color: darkgreen;}.second-a
    ),
    tags$script(src = "https://cdnjs.cloudflare.com/ajax/libs/mathjax/2.7.2/MathJax.js?config=TeX-MML-AM_CHTML"),
```

Abbildung 1: Include Mathjax script

2. Use the `HTML` Function:

   - To include formulas, use the `HTML` function from the `shiny` package.
   - Example:

     ```
     HTML("This is a mathematical formula: $$\\sum_{i=1}^{n} i$$")
     ```

3. Line Breaks and New Paragraphs:

   - Use HTML tags like `<br/>` for line breaks or new paragraphs.
   - Example:

     ```
     HTML(paste0("This is a formula:", "<br/>", "Another formula:"))
     ```

4. Inlcude HTML Blocks in your UI-Code:

```
div(
  HTML(paste0(
    "haasdiasidida $$\\int_{a}^{b} f(x) = x^{4} \\, dx$$", "<br/>",
    "wie kann ich in diesem ding neue Zeilen beginnen also Absätze"
  )),
  HTML("das ist das Summenzeichen: $$\\sum_{i=1}^{n} i - \\prod_{i=1}^{n} x_i$$,
    so nice die formel hier nh"),
  HTML(paste0("This is a formula:", "<br/>", "Another formula:",
    "<br/>", "Paragraph text.")),
```

Abbildung 2: Include HTML blocks to UI

5. Here are some Examples:

```
HTML("This is the summation symbol: $$\\sum_{i=1}^{n} i$$"),
HTML("This is the product symbol: $$\\prod_{i=1}^{n} x_i$$"),
HTML("Here is something under the square root: $$\\sqrt{4x^{7}}$$"),
HTML("Here is an integral with a sine function: $$\\int_{a}^{b} \\sin(x) \\, dx$$")
```

Abbildung 3: examples

This is the summation symbol:

$$\sum_{i=1}^{n} i$$

This is the product symbol:

$$\prod_{i=1}^{n} x_i$$

Here is something under the square root:

$$\sqrt{4x^7}$$

Here is an integral with a sine function:

$$\int_{a}^{b} \sin(x)\, dx$$

Abbildung 4: examples visualized