Multicases

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Introduction

The 'multicases' package provides an environment for typesetting cases with multiple columns. This is useful for displaying piecewise functions with additional annotations or explanations in separate columns.

Usage

The 'multicases' environment takes two optional arguments:

- The number of columns (default is 2).

- The alignment specification for the columns (default is the first column centered and the rest left-aligned). The alignment characters are 'l', 'c', 'r', and 'a' (for `align`-like behaviour).

```
\begin{multicases}[<number of columns>][<alignment>]
    <column 1> & <column 2> & <column 3> & ... \\
    ...
\end{multicases}
```

Examples

1 - custom alignment

$$
f(x) = \begin{cases}
x^2 + \sum a_x^3 & \text{if } x < 0 & 0 \text{ (negative)} \\[1em]
\dfrac{1}{x^2} & \text{if } x > 0 & 1/x \text{ (positive)} \\[1em]
0 & \text{otherwise} & 0 \text{ (zero)}
\end{cases}
\tag{1}
$$

```
\begin{equation}
    f(x) =
    \begin{multicases}[3][lca]  % 3 columns; first center, second left, third align-like
        \begin{multicases}[3][cla]
            x^2 + \sum{a_{x}^3}      & \text{if $x<0$}  & 0~&(\text{negative}) \\[1em]
            \displaystyle\frac{1}{x^2} & \text{if $x>0$}  & 1/x~&(\text{positive}) \\[1em]
            0                        & \text{otherwise} & 0~&(\text{zero})
        \end{multicases}
\end{equation}
```

2 - default behaviour

$$
f(n) = \begin{cases}
n/2 & \text{if } n \text{ is even} \\
3n+1 & \text{if } n \text{ is odd}
\end{cases}
\tag{2}
$$

```
\begin{equation}
    f(n) =
        \begin{multicases}
            n/2  & \text{if $n$ is even} \\
            3n+1 & \text{if $n$ is odd}
        \end{multicases}
\end{equation}
```