The `mdframed` package

Examples for `framemethod=default`

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In this document I collect various examples for `framemethod=default`. Some presented examples are more or less exorbitant.

Contents

1 Loading

In the preamble only the package `mdframed` width the option `framemethod=default` is loaded. All other modifications will be done by `\mdfdefinestyle` or `\mdfsetup`.

Note

Every `\global` inside the examples is necessary to work with the package `showexpl`.

2 Examples

All examples have the following settings:

```
\mdfsetup{skipabove=\topskip,skipbelow=\topskip}
\newrobustcmd\ExampleText{%
An \textit{inhomogeneous linear} differential equation
has the form
\begin{align}
L[v ] = f,
\end{align}
where $L$ is a linear differential operator, $v$ is
the dependent variable, and $f$ is a given non−zero
function of the independent variables alone.
}
```

Example 1 – very simple 2 *Examples*

Example 1 – very simple

```
\global\mdfdefinestyle{exampledefault}{%
      linecolor=red,linewidth=3pt,%
      leftmargin=1cm,rightmargin=1cm
}
\begin{mdframed}[style=exampledefault]
\ExampleText
\end{mdframed}
```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{1}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 2 – hidden line + frame title

```
\global\mdfapptodefinestyle{exampledefault}{%
 topline=false,rightline=true,bottomline=false}
\begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
\ExampleText
\end{mdframed}
```

Inhomogeneous linear

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{2}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 3 – colored frame title   *2 Examples*

Example 3 – colored frame title

```
\global\mdfapptodefinestyle{exampledefault}{%
    rightline=true,innerleftmargin=10,innerrightmargin=10,
    frametitlerule=true,frametitlerulecolor=green,
    frametitlebackgroundcolor=yellow,
    frametitlerulewidth=2pt}
\begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
\ExampleText
\end{mdframed}
```
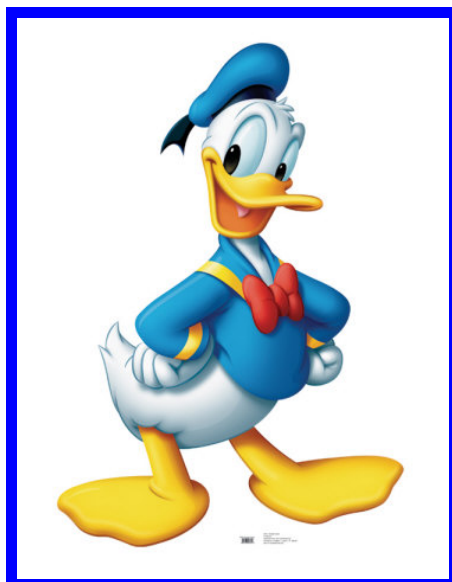
Inhomogeneous linear

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{3}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 4 – framed picture which is centered

```
\begin{mdframed}[userdefinedwidth=6cm,align=center,
                    linecolor=blue,linewidth=4pt]
\includegraphics[width=\linewidth]{donald−duck}
\end{mdframed}
```

Example 5 – Theorem environments

```
\mdfdefinestyle{theoremstyle}{%
    linecolor=red,linewidth=2pt,%
    frametitlerule=true,%
    frametitlebackgroundcolor=gray!20,
    innertopmargin=\topskip,
}
\mdtheorem[style=theoremstyle]{definition}{Definition}
\begin{definition}
\ExampleText
\end{definition}
\begin{definition}[Inhomogeneous linear]
\ExampleText
\end{definition}
\begin{definition*}[Inhomogeneous linear]
\ExampleText
\end{definition*}
```

Definition 1

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{4}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Definition 2: Inhomogeneous linear

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{5}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Definition: Inhomogeneous linear

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{6}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 6 – theorem with separate header and the help of TikZ (complex)

```
\newcounter{theo}[section]
\newenvironment{theo}[1][]{%
 \stepcounter{theo}%
  \ifstrempty{#1}%
  {\mdfsetup{%
     frametitle={%
         \tikz[baseline=(current bounding box.east),outer sep=0pt]
           \node[anchor=east,rectangle,fill=blue!20]
           {\strut Theorem~\thetheo};}}
  }%
  {\mdfsetup{%
      frametitle={%
         \tikz[baseline=(current bounding box.east),outer sep=0pt]
           \node[anchor=east,rectangle,fill=blue!20]
           {\strut Theorem~\thetheo:~#1};}}%
   }%
   \mdfsetup{innertopmargin=10pt,linecolor=blue!20,%
              linewidth=2pt,topline=true,
              frametitleaboveskip=\dimexpr-\ht\strutbox\relax,}
   \begin{mdframed}[]\relax%
   }{\end{mdframed}}
\begin{theo}[Inhomogeneous Linear]
\ExampleText
\end{theo}

\begin{theo}
\ExampleText
\end{theo}
```

Theorem 1: Inhomogeneous Linear

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{7}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Theorem 2

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{8}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 7 – hide only a part of a line

The example below is inspired by the following post on StackExchange Theorem decorations that stay with theorem environment

```
\makeatletter
\newlength{\interruptlength}
\setlength{\interruptlength}{2.5ex}
\newrobustcmd\overlaplines{%
  \appto\mdf@frame@leftline@single{%
    \llap{\color{white}%
        \rule[\dimexpr-\mdfboundingboxdepth+\interruptlength\relax]%
            {\mdf@middlelinewidth@length}%
            {\dimexpr\mdfboundingboxtotalheight%
              \ifbool{mdf@topline}{+\mdf@middlelinewidth@length}{}%
              -2\interruptlength\relax}%
    }%
  }%
  \appto\mdf@frame@rightline@single{%
    \rlap{\color{white}%
        \hspace*{\mdfboundingboxwidth}%
        \hspace*{\mdf@innerrightmargin@length}%
        \rule[\dimexpr-\mdfboundingboxdepth%
                +\interruptlength\relax]%
            {\mdf@middlelinewidth@length}%
            {\dimexpr\mdfboundingboxtotalheight%
              +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}%
              -2\interruptlength\relax}%
    }%
  }%
}
\makeatother
\overlaplines

\begin{mdframed}[linecolor=blue,linewidth=8pt]
\ExampleText
\end{mdframed}
```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{9}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.