

# The mdframed package

Examples for framemethod=TikZ

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

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## 1 Loading

In the preamble only the package `mdframed` with the option `framemethod=TikZ` 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.
}
```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (1)$$

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. round corner

```
\global\mdfdefinestyle{exampledefault}{%
  outerlinewidth=5pt, innerlinewidth=0pt,
  outerlinecolor=red, roundcorner=5pt
}
\begin{mdframed}[style=exampledefault]
\ExampleText
\end{mdframed}
```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (2)$$

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 1 – hidden line + frame title

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

#### Inhomogeneous linear

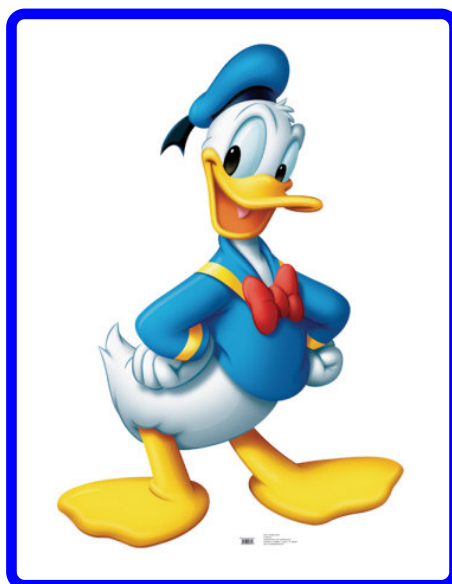
An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (3)$$

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 2 – framed picture which is centered

```
\begin{mdframed}[userdefinedwidth=6cm, align=center,
                 linecolor=blue, middlelinewidth=4pt, roundcorner=5pt]
\includegraphics[width=\linewidth]{donald-duck}
\end{mdframed}
```



## Example 3 – Gimmick

```
\mdfsetup{splitbottomskip=0.8cm, splittopskip=0cm,
           innerrightmargin=2cm, innertopmargin=1cm, %
           innerlinewidth=2pt, outerlinewidth=2pt,
           middlelinewidth=10pt, backgroundcolor=red,
           linecolor=blue, middlelinecolor=gray,
           tikzsetting={draw=yellow, line width=3pt, %
                        dashed, %
                        dash pattern= on 10pt off 3pt},
           rightline=false, bottomline=false}
\begin{mdframed}
\ExampleText
\end{mdframed}
```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (4)$$

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.

## Example 4 – complex example with TikZ

```

\tikzstyle{titregris} =
    [draw=gray , thick , fill=white , shading = exersicetitle , %
    text=gray , rectangle , rounded corners ,
    right , minimum height=.7cm]

\pgfdeclarehorizontalshading{exersicebackground}{100bp}
{color(0bp)=(green!40);
color(100bp)=(black!5)}

\pgfdeclarehorizontalshading{exersicetitle}{100bp}
{color(0bp)=(red!40);
color(100bp)=(black!5)}

\newcounter{exercise}
\renewcommand\theexercise{Exercise~n\arabic{exercise}}
\makeatletter
\def\mdf@@exercisepoints{}
\define@key{mdf}{\exercisepoints}{%
    \def\mdf@@exercisepoints{#1}}
}
\renewrobustcmd\mdfcreateextratikz{%
    \node[titregris , xshift=1cm] at (P-O) %
        {\mdf@frametitlefont{\theexercise}};
    \ifdefempty{\mdf@@exercisepoints}%
    {}%
    {\node[titregris , left , xshift=-1cm] at (P)%
        {\mdf@frametitlefont{\mdf@@exercisepoints points}};}%
}
\makeatother

\mdfdefinestyle{exercisestyle}{%
    outerlinewidth=1pt ,
    innerlinewidth=0pt ,
    roundcorner=2pt ,
    linecolor=gray ,
    tikzsetting={shading = exersicebackground} ,
    innertopmargin=1.2\baselineskip ,
    skipabove={\dimexpr 0.5\baselineskip+\topskip\relax} ,
    needspace=3\baselineskip ,
    frametitlefont=\sffamily\bfseries ,
    settings={\global\stepcounter{exercise}} ,
}

\begin{mdframed}[style=exercisestyle ,]
\ExampleText
\end{mdframed}

\begin{mdframed}[style=exercisestyle , exercisepoints=10]
\ExampleText
\end{mdframed}

```

**Exercise n1**

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.

**Exercise n2****10points**

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.