

# Quick and Easy Minimal Introduction to Accessible PDFs

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January 21, 2026

# Key Points

## Latex to tagged PDFs:

- ▶ Use LuaLatex (Update your TexLive to 2025)
- ▶ Add alt text to Figures
- ▶ Use Overleaf

## Latex to HTML:

- ▶ LatexML
- ▶ MathJax

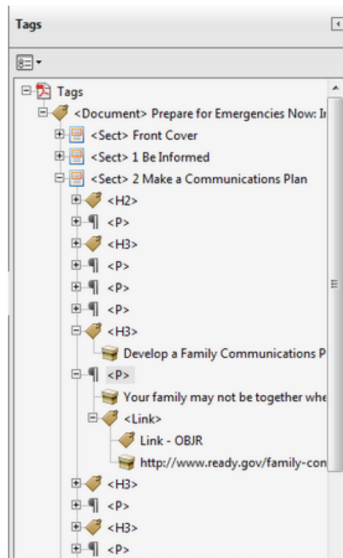
## New or Other Platforms:

- ▶ PreTeXt
- ▶ Word, PowerPoint, Excel ... so they claimed

## Teaching Pit Crew Website (TPC):

<https://www.math.purdue.edu/~yipn/TPC/>

# What is a tagged PDFs



## Create a Personal Support Network (con't)

Talk to your employer and co-workers about the assistance you might need in an emergency. This is particularly important if you need to be lifted or carried. Talk about any communication difficulties, physical limitations, equipment instructions and medication procedures that might arise during an emergency. Always participate in exercises, trainings and emergency drills offered by your employer or in your community.

## Develop a Family Communications Plan

Your family may not be together when disaster strikes, so plan how you will contact one another and review what you will do in different situations. For more information on how to develop a family communications plan, visit <http://www.ready.gov/family-communications>.

## Deciding to Stay or Evacuate

Depending on your circumstances and the nature of the emergency, the first important decision is whether to stay or go. You should understand and plan for both possibilities. Use common sense and available information to determine if there is immediate danger. In any emergency, local authorities may not immediately be able to provide information on what is happening and what you should do. However, you should monitor television,

# Latex to tagged PDFs

- ▶ Use LuaLatex (Update your TexLive to 2025)
- ▶ Use DocumentMetadata and unicode-math:

```
1 \DocumentMetadata{
2     lang=en,
3     pdfversion = 2.0,
4     pdfstandard = ua-2, %or a-4
5     tagging=on,
6     tagging-setup={math/setup=mathml-SE}
7 }
8 \documentclass[12pt]{article}
9 %\documentstyle[portland, epsfig, 12pt]{article}
10 %\pagestyle{empty}
11 %\pagestyle{headings}
12 \usepackage{amsmath,amsfonts,amssymb}
13 \usepackage{epsfig}
14 \usepackage{showkeys}
15 \usepackage{unicode-math}
```

# Latex to tagged PDFs

## ► Add alt text to Figures


```
1 \includegraphics[height=4cm,alt={Portrait of Shakespeare}]{william-shakespeare.jpg}  
2 \includegraphics[height=4cm,artifact]{crinklepaper}\makebox[0pt][r]{Some text }  
3 \includegraphics[height=\baselineskip,actualtext=A]{example-image-a.jpg}
```


## ► You can also use Overleaf which includes packages: in File/Settings:



### Settings



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<> Editor

 **Compiler**

 Appearance

 Account settings 

 Subscription 

Main document

The primary file for compiling your project. You can also right-click a file to set it as main.

screenreadde▼

Compiler

The LaTeX engine used for compiling

LuaLaTeX ▼

TeX Live version

The version of TeX Live used for compiling

2025 ▼

# Latex to tagged PDFs

The following webpages has many **actual examples** and comments (all accessible from TPC):

- ▶ Examples by Mike Montoro
- ▶ Webpage of Tim Prescott
- ▶ Latex Tagging Project



[LaTeX Tagging Project](#)

## The LaTeX Tagged PDF Project

This `tagging-project` repository is meant to track issues and suggestions related to the "LaTeX Tagged PDF" project. The code for this project is split over several other repositories (`latex2e`, `latex3`, `tagpdf`, ...) to name a few) and so this here is a convenient place to keep any more general topics or issues that cut across the different repositories in a single place.



[LaTeX Tagging Project](#)

## Using LaTeX to produce accessible PDF

(LaTeX2e 2025-11-01)

The new code can be used with pdfLaTeX or the Unicode engine luaLaTeX. The latter is the preferred engine recommended for new documents.

# Latex to HTML

- ▶ Use LatexML (see Arshak Petrosyan from TPC):  
**Using LaTeXML**

## Basic Command-Line Workflow

If you are comfortable with the command line, the workflow typically involves two steps:

```
latexml --dest=yourfile.xml yourfile.tex  
latexmlpost --dest=yourfile.html yourfile.xml
```

Here is an [example](#).

## Single-Step Conversion

```
latexmlc --dest=yourfile.html yourfile.tex
```

# Latex to HTML

## ► Use MathJax:

### MathJax v4: TeX input, HTML output test

When  $a \neq 0$ , there are two solutions to  $ax^2 + bx + c = 0$  and they are

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

#### The Lorenz Equations

$$\begin{aligned}\dot{x} &= \sigma(y - x) \\ \dot{y} &= \rho x - y - xz \\ \dot{z} &= -\beta z + xy\end{aligned}$$

#### The Cauchy-Schwarz Inequality

$$\left( \sum_{k=1}^n a_k b_k \right)^2 \leq \left( \sum_{k=1}^n a_k^2 \right) \left( \sum_{k=1}^n b_k^2 \right)$$



# Latex to HTML

## ► Use MathJax:

```
<head>
  <script>
    MathJax = {
      tex: {inlineMath: {'+': [['$', '$']]}}
    };
  </script>
  <script defer src="https://cdn.jsdelivr.net/npm/mathjax@4/tex-ctml.js"></script>
</head>

<body>

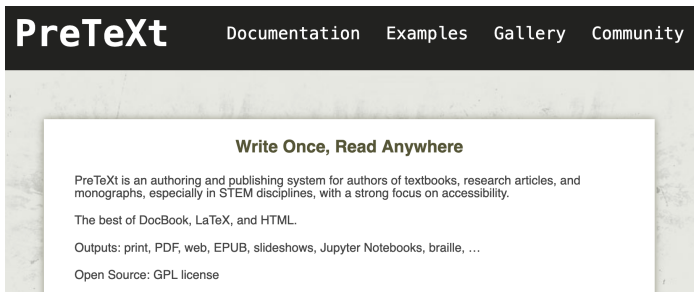
<p>
  When  $a \neq 0$ , there are two solutions to  $(ax^2 + bx + c = 0)$  and they are
   $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ .
</p>

<h2>The Lorenz Equations</h2>

<p>
  \begin{align}
    \dot{x} &= \sigma(y-x) \\
    \dot{y} &= \rho x - y - xz \\
    \dot{z} &= -\beta z + xy
  \end{align}
</p>
```

# New Platforms

## ► PreTeXt:

A screenshot of the PreTeXt website. The top navigation bar is black with white text for 'PreTeXt' and links to 'Documentation', 'Examples', 'Gallery', and 'Community'. The main content area has a light gray background with a white box in the center. The box contains the heading 'Write Once, Read Anywhere' followed by a paragraph describing PreTeXt as an authoring and publishing system for textbooks, research articles, and monographs, especially in STEM disciplines. Below this, it lists 'The best of DocBook, LaTeX, and HTML.' and 'Outputs: print, PDF, web, EPUB, slideshows, Jupyter Notebooks, braille, ...'. At the bottom of the box, it states 'Open Source: GPL license'.

# New Platforms

- ▶ PreTeXt (Examples from Jakayla Robbins):

## Ordinary Differential Equations: MA26600 Spring 2026

Jakayla Robbins

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## Ordinary Differential Equations

MA26600 Spring 2026

Jakayla Robbins

Department of Mathematics

Purdue University

# New Platforms

## ► PreTeXt (Examples from Jakayla Robbins):

Front Matter

Course Documents

Lecture Notes

Lesson 1, Introduction to  
Differential Equations

Lesson 2, Using Integration to  
Solve Simple Differential  
Equations

Lesson 3, Slope Fields and  
Sketching Solution Curves

Lesson 4, Separable Differential  
Equations and Applications

Lesson 5, First-order Linear  
Differential Equations, Part I

Lesson 6, First-order Linear  
Differential Equations, Part II

Lesson 7, Substitution Methods

Lesson 8, Exact Differential  
Equations and More  
Substitutions

Lesson 9, Population Growth  
Models

Lesson 10, Equilibrium Solutions  
and Stability

## Lesson 2, Using Integration to Solve Simple Differential Equations



Textbook Section(s).

This lesson is based on Section 1.2 of your textbook by Edwards, Penney, and Calvis.

**Differential Equations of the form**  $\frac{dy}{dx} = f(x)$ .

A differential equation of the form:

$$\frac{dy}{dx} = f(x)$$

has **general solution**

$$y(x) = \int f(x) dx + C$$

(The " $+C$ " is redundant, but I included it to stress that the generic constant is required in a general solution.)