

HOW TO TYPE YOUR HOMEWORK EASILY

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- (1) The easiest way to do this is to go to an online L^AT_EX compiler—I recommend `overleaf.com`. (There are other options; see `tug.org/begin.html` if you're curious or have poor internet access.)
- (2) Either register for an Overleaf account, or Log In using your Google account.
- (3) The first time you log in, you will see a green button that says “Create First Project” and not much else.

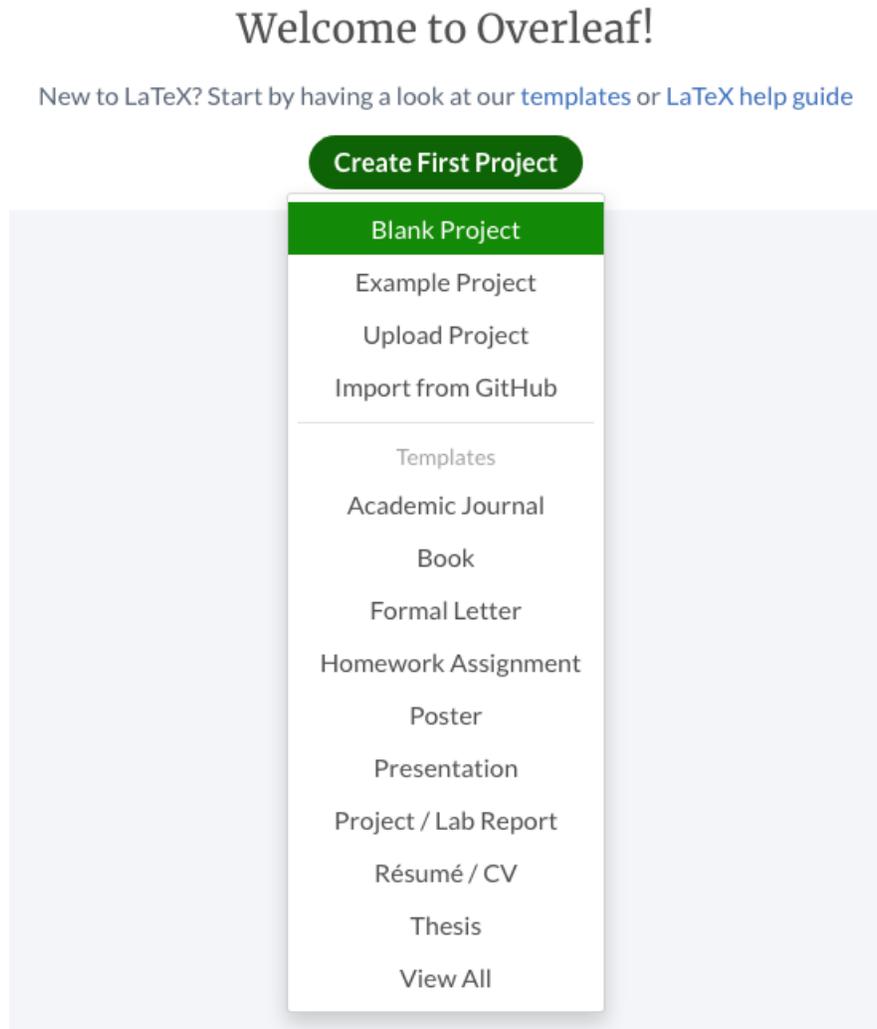
Welcome to Overleaf!

New to LaTeX? Start by having a look at our [templates](#) or [LaTeX help guide](#)

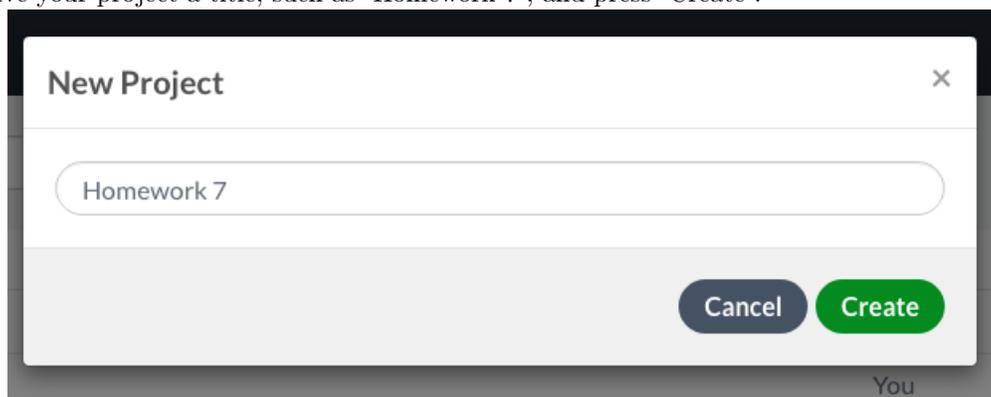
Create First Project

Later you should be sent to (or navigate to) `overleaf.com/project`, where you will see a green “New Project” button and a list of existing projects.

- (4) Press the “Create First Project” or “New Project” button and choose “Blank Project”.

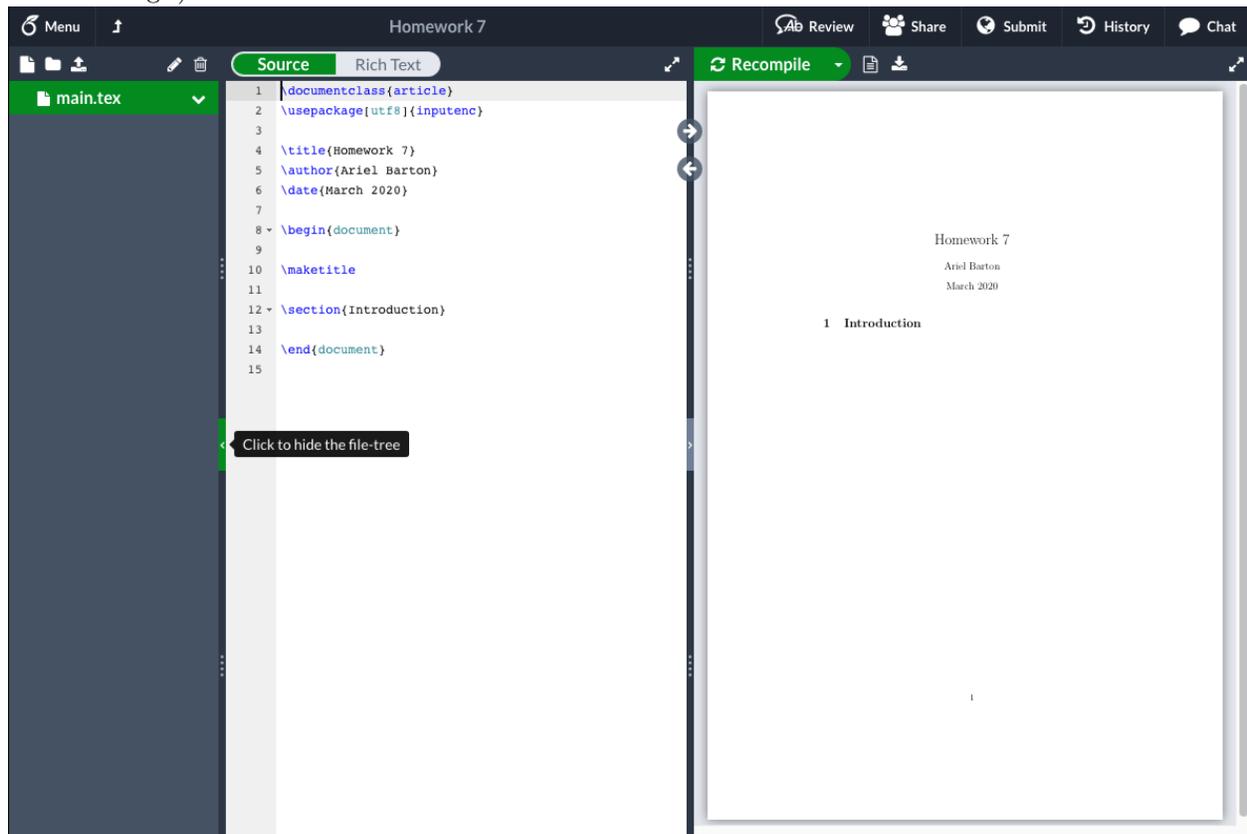


- (5) Give your project a title, such as “Homework 7”, and press “Create”.



- (6) You should see two windows. You will type into the window on the left. Your compiled document will be displayed in the window on the right.

- (7) (Go ahead and hide the file tree. You will not need it until you are doing *much* more complicated things.)



- (8) Open the text file aeb019.hosted.uark.edu/Math4513Homework7.txt and copy and paste the contents to the left hand window.

- (9) Type your name where it says Your Name Here.
 (10) Press Recompile.

The screenshot shows a LaTeX editor interface with two main panes. The left pane displays the source code, and the right pane shows the compiled PDF document.

Source Code (Left Pane):

```

4 % This makes grading easier
5 \usepackage{authoraftertitle}
6 \usepackage{fancyhdr}
7 \pagestyle{fancy}
8 \lhead{\MyAuthor}
9 \rhead{\thepage}
10
11 % Use letters in enumerated lists
12 \usepackage{enumitem}
13 \setenumerate[0]{label={\alph*}}
14
15 % Put your title, name, and the date here
16 \title{Homework 7}
17 \author{Your Name Here}
18 \date{April 1, 2020}
19
20 % You can define abbreviations here
21 \newcommand{\problem}[1]{\par\noindent\textbf{Problem-#1}}
22 \newcommand{\answer}[1]{\par\medskip\ssffamily#1\par\medskip}
23 \newcommand{\cl}{\mathrm{cl}}\nolimits
24 \newcommand{\R}{\mathbb{R}}
25
26 \begin{document}
27
28 \maketitle
29
30 \problem{2.1.4.} The following result is called the \emph{squeezing principle}. Suppose $f$, $g$ and $h$ are functions defined on some domain defined on some domain $\mathbb{R}$ and that $a \in \mathbb{R}$. Show that if $g(x) \leq f(x) \leq h(x)$ for all $x \in X$, and if
31 $\lim_{x \to a} g(x) = \lim_{x \to a} h(x) = L$,
32 then
33 $\lim_{x \to a} f(x) = L$.
34
35 \answer{Type your answer here. Use double line breaks for paragraph breaks.}
36
37 Enclose mathematics in single dollar signs

```

Compiled PDF (Right Pane):

HOMEWORK 7

YOUR NAME HERE

Problem 2.1.4. The following result is called the *squeezing principle*. Suppose f , g and h are functions defined on some domain $X \subseteq \mathbb{R}$ and that $a \in \mathbb{R}$. Show that if $g(x) \leq f(x) \leq h(x)$ for all $x \in X$, and if

$$\lim_{x \rightarrow a} g(x) = \lim_{x \rightarrow a} h(x) = L,$$

then

$$\lim_{x \rightarrow a} f(x) = L.$$

Type your answer here. Use double line breaks for paragraph breaks.
 Enclose mathematics in single dollar signs $\$(x)\$$ or in backslash-parentheses $\$(x)\$$.
 Enclose displayed mathematics in double dollar signs $\$\$(x)\$\$$ or in backslash-brackets $\$(x)\$$.

Date: April 1, 2020

- (11) Stare at the text in the left hand window until you understand how it relates to the PDF in the right hand window.

Some hints:

- Nothing before the `\begin{document}` appears directly, so go ahead and skip down.
- Everything after a `%` is ignored by the program.
- Mathematics (even a single symbol f) should be surrounded by dollar signs or equivalent glyphs.
- You can generally get math symbols by typing their names: `\lim` for \lim , `\sum` for \sum , `\inf` for \inf , `\sup` for \sup , `\subteq` for \subseteq , and so on. A pretty good list of symbols is available at artofproblemsolving.com/wiki/index.php/LaTeX:Symbols.
- You can get superscripts and subscripts with `^` and `_` (shift-6 and shift-minus). You can get long superscripts with braces: x^{12} .
- You can get fractions with `\frac`: $\frac{1}{3}$.
- You can get a prime with a simple apostrophe (you don't need the `\prime` command or a `^`): f' .
- You get braces with a backslash: $\{$ and $\}$.
- You get binary coefficients ("n choose k") with $\binom{n}{k}$.

- You can get large parentheses (or brackets) with `\left` and `\right`:

$\left(\frac{3}{2}\right)$ `\left(\frac{3}{2}\right)`.

- A multiline display can be done neatly as follows:

```
\begin{align*}
(x+y)^2
&= (x+y)(x+y) \\
&= x^2+2xy+y^2.
\end{align*}
```

$$\begin{aligned}(x+y)^2 &= (x+y)(x+y) \\ &= x^2 + 2xy + y^2.\end{aligned}$$

- You may ask me about this during office hours or by email.
- (12) When you've typed your answers in (where it says **Type answer here**), download the PDF and upload it to Blackboard. The Download button is next to the Log File button, which is next to the Recompile button. (The Log File button can be useful if your answer doesn't look like you expect—if you type `\subttteq` by accident, for example, it will leave out the \subseteq in your PDF and inform you in the log that it doesn't know what "`\subttteq`" means.)

