

How to check out library references

Create a new folder `assignment5notes` in your usual Overleaf project, and upload template files from egunawan.github.io/writing/hw/05/notes5.tex and egunawan.github.io/writing/hw/05/bib5.bib

Using MathSciNet to check out a book/article

- a. Go to UConn Library Math and Stat Subject Guide: <https://guides.lib.uconn.edu/math>
- b. Find the list of “Key Databases” and click on [MathSciNet](#).
- c. As an example, we will use mathSciNet to check out the book “Positive polynomials and sums of squares (AMS Mathematical Surveys and Monographs)” which was recommended by one of the speakers.
 - On the title’s field, type “Positive polynomials and sums of squares”, and search.
 - If too many items show up, try restricting your search to “book” only.
 - After you’ve found the correct publication, click on it to see a short review of this publication.
 - To check this out from the library, click on the dark blue button “UConn Full Text” on the top right.
 - A small pop-up window will ask you to “sign in to request” - you should sign in with your UConn NetID.
 - If the UConn library has an electronic or physical copy, it will show you the option to check it out. If not, there will be an option to order an interlibrary loan. (If you think the library should own this, please tell me and I will request a library purchase.)
 - If you decide to use this book as one of your references for this assignment, you should generate the BibTeX (as opposed to typing it manually).
 - On the drop-down menu, select “BibTeX.” This should take you to a page containing a BibTeX entry of the book we searched for: <https://mathscinet-ams-org.ezproxy.lib.uconn.edu/mathscinet/search/publications.html?fmt=bibtex&pg1=MR&s1=2383959>.
 - Copy this entry and paste it to your `.bib` file. Replace the key of the entry from `MR2383959` to another key name that you can easily remember, following your convention. If you follow my convention you would use `Mar08` as the key.
 - Check that you didn’t have a typo by citing this new BibTeX item in `intro5.tex`. For example, type
$$\text{We we plan to review facts given in \cite[Chapter 1]{Mar08}.$$
and check that the sentence shows up as “We we plan to review facts given in [Mar08, Chapter 1]” (in purple) in the PDF preview.

Using Google Scholar and other search engines to find a publication and generate a BibTeX entry Some books or articles will not show up on MathSciNet search results. You can try Google Scholar.

- a. Go to scholar.google.com. Try some key words, for example “Hilbert’s problems”
- b. If you prefer more recent publications, you can set your date range to, say, 1999.
- c. If you sort by relevance, the first item that appears may be the book “The honors class: Hilber’s problems and their solvers” by Yandell (in fact, one of the references used by the first speaker this semester). You can see how many times an article has been cited in other publications.
- d. Click on the symbol which looks like a quotation mark, then click on the link to “BibTeX”
- e. Copy this entry, and paste it into your `.bib` file.

Citing websites and unpublished articles You may want to cite a website, for example, Wikipedia or the math club speaker’s slides. To cite a website, follow the example from assignment 2.

Other possible places to look for references:

- online library resources (such as www-jstor-org.ezproxy.lib.uconn.edu and guides.lib.uconn.edu/math),
- your own textbooks or online textbooks - for example, the website aimath.org/textbooks/approved-textbooks/ has a list of open-source textbooks available for free online
- Prof. Gunawan’s books which were suggested for you in feedback posts

Assignment 5: handwritten notes and bibliography

Preparation for writing *notes for Assignment 5*:

- Step 1. Choose one or two talks (from Week 2 to Week 8) that spark your interest. Keep in mind that these notes are to help you write a short paper (for assignment 6).
- Step 2. Look at the suggested references under each talk in egunawan.github.io/writing/resources.
- Step 3. Check out (electronic or physical copies of) several of these references from the library (see above) or the internet (if freely available). You need to use at least two references, and at least one must be a peer-reviewed publication (which would show up in a MathSciNet search) OR an article posted on arxiv.org (which will show up in Google Scholar search).
- Step 4. Read the books/papers you have checked out and take notes as you read. The notes should be 5-10 pages.

Suggestions for items that should be included in your notes

- motivation, connection to other areas of mathematics or natural/social science, possible answers to “why do we care?”
- precise definitions that are needed to discuss the concepts, theorems, and questions that you want to write about
- examples (start with easy-to-understand examples!)
- proven facts (*e.g.*, every one-variable polynomial can be expressed as a sum of two squares)
- unsolved problems (*e.g.*, what is known or conjectured about irrationality or transcendence of the series $\sum_{n \geq 1} 1/n^k$ for $k = 2, 3, 4, \dots$, the status of the numbers $\pi + e$ and πe , *etc.*)
- historical facts: when and where questions were introduced/ people started studying them/ theorems were proved
- for example, who first proved e or π is irrational or transcendental and in what year, what was the first explicitly known transcendental number and when was it found, *etc.*)
- if the concepts are not from ancient time, discuss the individuals who made significant contributions to this area

Instructions for submitting *the bibliography portion*

- Create a new folder `assignment5notes` in your usual Overleaf project. You don't need to reshare the project.
- Use template files egunawan.github.io/writing/hw/05/notes5.tex and egunawan.github.io/writing/hw/05/bib5.bib to create a new `.tex` file called `notes5.tex` and a new `.bib` file.
- Make it so that all your references show up by writing, for example,

We review facts given in `\cite[Chapter 1]{Mar08}`, `\cite[Location]{KeyToBibItem}`, and
`\cite[Location]{AnotherKey}`.

Instructions for submitting *the handwritten notes*

- At the top of the page, write your name, and a short description (1-2 sentences) of your notes.
- Write the references you have taken notes on. Include at least two references.
- Submit your handwritten notes (5-10 pages) at the beginning of class. Alternative ways to submit:
 - If you prefer to write your notes in L^AT_EX, let me know and you can write them in the `notes5.tex` file you've created earlier for the bibliography.
 - If you plan to be absent, inform me ahead of time. Scan your notes to a `.pdf` file using phone scanner apps such [CamScanner](#), then upload this `.pdf` file to the folder `assignment5notes`.