

EECS 203: Discrete Mathematics
Fall 2023
Assignment 0:
Course Policies & Page-Matching

Due **TUESDAY, Sept. 5**, 10:00 pm
No late homework accepted past midnight.

Number of Problems: 9

Total Points: 100

Like all future homeworks, this assignment should be submitted as a PDF through Gradescope (see instructions on course site for more details). We strongly prefer students to compose homework solutions using a word processor (Google Docs or MS Word), or ideally using L^AT_EX, but we will accept handwritten homework submissions scanned/photographed and converted to PDF. Note that submitted files must be less than 50 mb in size, but they really should be much smaller than this. No email or Piazza regrade requests will be accepted. For more detail on regrade requests, please refer to course policies.

- We will not grade homework problems that were not properly matched on Gradescope. Please submit early and often and double-check that you matched each question to the page(s) where your solution appears.
- Explanation or justification for yes/no, true/false, multiple choice questions, and the like: You must provide some sort of explanation or justification for these types of questions (so we know you didn't just guess), unless explicitly specified in the problem statement. For example, simply answering "true" for a T/F question without providing an explanation will receive little or no credit.
- All problems require work to be shown. Questions that require a numerical answer will not be given credit if no work/explanation is shown.
- Honor Code: By submitting this homework, you agree that you are in compliance with the Engineering Honor Code and the Course Policies for 203, and that you are submitting your own work.
- Hyperlinks on Submitting Homework to Gradescope: [Instructions](#) or [Youtube Video](#)

1. Did You Read The First Page? [6 points]

Did you read the first page? We get it, it's a lot of words. Please give it a read! It's important information that you'll want to know as you complete homework assignments throughout the semester to **avoid losing points from logistical mistakes** ☺. After you've given the first page a careful read over, write your favorite song in 2023 so far as your "answer" to this question.

Solution:

Grading Guidelines [6 points]

+6 any non-blank response

2. A Thing About Page Matching [6 points]

You must match your pages to the problems on Gradescope in order to receive credit. Please note as soon as you press submit, you've successfully submitted by the deadline. You can still match the pages with no rush, that doesn't add to your submission time. Write down your favorite class so far to affirm you've read and understand this.

Solution:

Grading Guidelines [6 points]

+6 any non-blank response

3. Resource Location [12 points]

Where can you find each of the following resources? No justification necessary.

- (a) Lecture slides, lecture recordings, course announcements
- (b) Scheduled office hours
- (c) Questions and answers about course content and logistics (online forum)

Solution:

- (a) Canvas

(b) Google calendar on Canvas

(c) Piazza

Grading Guidelines [12 points]

For each part:

+4 correct answer

4. Exam dates [12 points]

What are the dates and times of the three course exams? No justification necessary.

Solution:

- Exam 1: Wednesday, October 4, 7:00-9:00 PM
- Exam 2: Wednesday, November 8, 7:00-9:00 PM
- Exam 3: Thursday, December 14, 7:00-9:00 PM

Grading Guidelines [12 points]

For each exam:

+2 correct date (day of week not necessary)

+2 correct time

5. Regrade Requests [16 points]

- (a) Where do you submit a regrade request?
- (b) What is the deadline for submitting regrade requests? Select **one** of the following:
- (i) by the last day of classes
 - (ii) by the next exam
 - (iii) 24 hours after the assignment's grades have been released
 - (iv) 1 week after the assignment's grades have been released
- (c) When should you submit a regrade request? Select **any number** of the following:
- (i) I feel like I deserve more points
 - (ii) My solution was incorrectly graded according to the posted rubric

- (iii) I have an alternate solution I think is right
 - (iv) I have an alternate solution I think is right, and I checked it with an instructor in office hours or on Piazza
- (d) What 3 things should you make sure to (re)read before submitting a regrade request?

Solution:

- (a) Gradescope
- (b) (iv)
- (c) (ii) and (iv)
- (d) The posted solution, the rubric, and my solution

Grading Guidelines [16 points]

For each part:

+4 correct answer

6. Admin Form [8 points]

What is the best way to contact course staff about individual administrative concerns, and where can you find the link?

Solution:

The admin form.

Grading Guidelines [8 points]

+8 correct answer

7. Reflection [8 points]

What strengths, strategies, and resources do you have to help you succeed in each of following?

- (a) Weekly assignments
- (b) Exams

Solution:

- (a) Strengths include any existing math or time management skills. Strategies include starting early, looking over discussion problems and solutions, and seeking help when you need it. Resources include classmates, office hours, Piazza, and regular attendance in lecture and discussion
- (b) Strengths include study skills and test-taking strategies. Strategies include studying a little bit each day over a longer period of time, doing practice exams in a realistic exam setting, and getting a good night's sleep before the exam. Resources include review sessions, practice exams, problem roulette, office hours, Piazza, and regular attendance in lecture and discussion

Grading Guidelines [8 points]**For each part:**

+4 any non-blank response

8. Exponents [16 points]

Compute the value of each of the following. We encourage you to keep it in exponential form as long as you can, for practice. **Remember to show your work.**

- (a) 5^3
- (b) $2^3 \cdot 2^2$
- (c) $\frac{3^6}{3^3}$
- (d) 5^0
- (e) $(2^4)^2$
- (f) $2^{(4^2)}$ (use a calculator for this one if you need to!)
- (g) $16^{\frac{1}{2}}$
- (h) 16^{-2}

Solution:

- (a) $5^3 = 5 \cdot 5 \cdot 5 = 125$
- (b) $2^3 \cdot 2^2 = 2^{3+2} = 2^5 = 32$

(c) $\frac{3^6}{3^3} = 3^{6-3} = 3^3 = 27$

(d) $5^0 = 1$, since any non-zero number to the power of 0 is 1.

(e) $(2^4)^2 = 2^{4 \cdot 2} = 2^8 = 256$

(f) $2^{(4^2)} = 2^{16} = 65536$

(g) $16^{\frac{1}{2}} = \sqrt{16} = 4$

(h) $16^{-2} = \frac{1}{16^2} = \frac{1}{256}$

Grading Guidelines [16 points]

For each part:

+1 correct answer

+1 shows work for computation

9. Logarithms [16 points]

Compute the value of each of the following. If the answer does not come out cleanly and results in an infinite decimal expansion, write “*too hard to compute.*” If the result is not defined, write “*undefined.*” For any question referencing x or y , let $\log_5(x) = 2.6$ and $\log_5(y) = 5.2$.

Remember to show your work.

(a) $\log_2 64$

(b) $\log_7 7$

(c) $\log_7 1$

(d) $\log_7 0$

(e) $\log_5(x + y)$

(f) $\log_5(xy)$

(g) $\log_2(x)$

(h) $\log_5(x^{25})$

Solution:

(a) $2^6 = 64$, so $\log_2 64 = 6$

(b) $7^1 = 7$, so $\log_7 7 = 1$

(c) $7^0 = 1$, so $\log_7 1 = 0$

(d) For any real number c , $7^c > 0$, so we will never have $7^c = 0$. This means $\log_7 0$ is undefined.

(e) A log of a sum does not come out to anything nice looking. Too hard to compute.

(f) $\log_5(xy) = \log_5(x) + \log_5(y) = 2.6 + 5.2 = 7.8$

(g) A log of a different base would require a change of base formula:

$$\log_2(x) = \frac{\log_b(x)}{\log_b(2)}$$

for any base $b > 0$ that we want. We know $\log_5(x)$, so let's let $b = 5$. We now have

$$\log_2(x) = \frac{\log_5(x)}{\log_5(2)} = \frac{2.6}{\log_5(2)}.$$

$\log_5(2)$, however, is not a clean number at all, so this is too hard to compute.

(h) $\log_5(x^{25}) = 25 \log_5(x) = 25 \cdot 2.6 = 65$

Grading Guidelines [16 points]

For each part:

+1 correct answer

+1 correct justification/work shown