1. [3 points] **There <u>is</u> work to submit for this problem. Read it carefully.**

- You may use your one pre-written page of notes, on an 8.5" by 11" standard sheet of paper, with whatever you want handwritten (not typed) on both sides.
- You are <u>not</u> allowed to use any other resources, including calculators, other notes, or the book.
- You may <u>not</u> use any electronic device or the internet, except to access the Zoom meeting for the exam, to access the exam file itself, to submit your work, or to report technological problems via the Google forms we will provide to do so. The one exception is that you may use headphones (e.g. for white noise) if you prefer, though please note that you need to be able to hear when the end of the exam is called in the Zoom meeting.
- You may <u>not</u> use help from any other individuals (other students, tutors, online help forums, etc.), and may <u>not</u> communicate with any other person about the exam until **11pm on Tuesday** (Ann Arbor time).
- The one exception to the above policy is that you may contact the proctors in your exam room via the chat in Zoom if needed.
- Violation of any of the policies above may result in a score of zero for the exam, and, depending on the violation, may result in a failing grade in the course.

As your submission for this problem, you must write "I agree," and write your initials and UMID number to signify that you understand and agree to this policy. By doing this and submitting it to Gradescope, you are attesting that you have not violated this policy.

2. [12 points]

a. [6 points] Consider the given table of values for the function $j(u)$.

u	1	2	3
$j(u)$	6		54

    i. Supposing that $j(u)$ is a linear function, fill in the missing entry in the table.
       Show your work.

    ii. Supposing that $j(u)$ is an exponential function, fill in the missing entry in the table.
        Show your work.

b. [6 points] A radioactive substance decays exponentially in such a way that, if you have some amount of it, then after 15.2 days you will only have a third as much of it remaining. If I have 110 grams of this substance today, how long will I have to wait until I only have 3 grams remaining? *Show every step of your work, and give your final answer in exact form.*