

APPM 1350

Final Exam

Fall 2022

Name	
Student ID	
Instructor	Lecture Section

This exam is worth 150 points and has **6 problems**.

Make sure all of your work is written in the blank spaces provided. If your solutions do not fit, there is additional space at the end of the test. Be sure to **make a note** indicating the page number where the work is continued or it will **not** be graded.

Show all work and simplify your answers. Name any theorem that you use. Answers with no justification will receive no points unless the problem explicitly states otherwise.

Notes, papers, calculators, cell phones, and other electronic devices are not permitted.

End of Exam Check List

1. If you finish the exam before 9:45 AM:

- Go to the designated area to scan and upload your exam to Gradescope.
- Verify that your exam has been correctly uploaded and all problems have been labeled.
- Leave the physical copy of the exam with your proctors.

2. If you finish the exam after 9:45 AM:

- Please wait in your seat until 10:00 AM.
- When instructed to do so, scan and upload your exam to Gradescope at your seat.
- Verify that your exam has been correctly uploaded and all problems have been labeled.
- Leave the physical copy of the exam with your proctors.

Formulas

$$\sin(2\theta) = 2 \sin \theta \cos \theta \qquad \cos(2\theta) = 2 \cos^2 \theta - 1 = 1 - 2 \sin^2 \theta$$

$$\sum_{i=1}^n i = \frac{n(n+1)}{2} \qquad \sum_{i=1}^n i^2 = \frac{n(n+1)(2n+1)}{6} \qquad \sum_{i=1}^n i^3 = \left(\frac{n(n+1)}{2}\right)^2$$

$$\int \frac{1}{\sqrt{1-x^2}} dx = \arcsin(x) + C \qquad \int \frac{1}{1+x^2} dx = \arctan(x) + C$$

