Math 407B/D – Final Exam
Autumn 2022

Time: 110 mins.

1. This exam is closed book and closed notes. You may not use any calculators, technological devices, or outside materials besides a writing utensil.

2. Stop writing when time is up. If you do not, points my be deducted from your final score.

3. Answer all questions in the spaces provided. If you run out of room for an answer, continue on the back of the page. There are also two blank pages for scratch work at the end of the exam. Do not tear these off.

4. Unless stated otherwise, justify your answers to receive full credit. Your answers do not have to be in complete sentences, but they do need to be understandable.

Name: _____

Student ID #: _____

Question	Points	Score
1	25	
2	20	
3	25	
4	12	
5	18	
Total:	100	

Possibly useful: The inverse of a 2×2 matrix $\begin{pmatrix} a & b \\ c & d \end{pmatrix}$ is $\begin{pmatrix} a & b \\ c & d \end{pmatrix}^{-1} = \frac{1}{(ad - bc)} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$.