

Notes on Exam 1, Math 544, Spring, 2016.

1. Exam 1 covers 1.1–1.3 and 1.5–1.7.
2. Be able to define “linearly independent” and “non-singular”.
3. Be able to state the Theorem about the linear dependence of p vectors in \mathbb{R}^m , when $m < p$. (I call this the “Short/fat Theorem”.)
4. Be able to state a few conditions that are equivalent to: “the matrix A is non-singular.” (I call this the “Non-singular matrix theorem, version 1.” On Exam 1, we will have a **total of 3** statements.)
5. The material on the old exams which is covered on your exam 1:
 - (a) Exam 1’s:
 - 97: 1, 2, 3, 4, 5, 7, 8, 9, 10.
 - 98: 1, 2, 3, 4, 5, 6, 7, 8, 9.
 - 01: 1, 4, 5, 6, 7.
 - 02: 1, 2, 3, 6, 8.
 - spring 03: 1, 2, 5, 6, 7, 8, 9, 10.
 - summer 03: 1, 2, 3, 4, 5, 6, 7, 8, 9.
 - 04: 1, 2, 3, 4, 5.
 - summer 05: all
 - fall 05: all
 - summer 06: 1, 2, 4, 6, 7.
 - fall 06: all
 - summer 07: 1, 2, 3, 4, 5, 6, 7.
 - fall 09: 1, 2, 3, 4, 5, 6, 7, 8, 9, 12.
 - spring 11: 1, 2, 3, 4, 5, 6, 7, 8, 9.
 - summer 12: all
 - (b) Exam 2’s:
 - 97: 1, 2.
 - 98: 1, 2, 4, 5, 6, 10.
 - 01: 2, 7, 8, 9, 10.
 - 02: 1, 7.
 - spring 03: 1, 2, 3, 4a, 4b, 4c, 6.

summer 03: 1, 2, 3, 4, 5, 7, 8, 9.

04: 1, 3, 4, 6, 7, 8.

summer 05: 1, 2, 4, 6, 7.

fall 05: 1, 7, 8.

summer 06: 9.

fall 06: 2, 8.

summer 07: 4, 5, 6, 7, 8.

spring 11: 1, 2, 3, 7, 9.

summer 12: 1, 2, 3.

(c) Exam 3's:

01: 4, 10.

02: 6.

summer 03: 1.

(d) Final Exams:

97: 9 (The matrices A and b are given before problem 6.), 14, 15, 16.

98: 4, 5, 6.

01: 4, 10e, 10f.

02: 3, 8 (Solve $Ax = b$ and then stop.), 15.

spring 03: 10, 11, 16, 17, 19.

summer 03: 11, 16, 17abc.

04: 1ab, 4.

summer 05: 1ab.

fall 05: 1ab, 6, 16.

summer 06: 2, 3abc.

fall 06: 1, 6a.

summer 07: 2.

fall 09: 1.

spring 11: 1, 2.

summer 12: 7.