

Homework 2

Color Scheme: Blue problems are graded, orange and red are not. In fact, don't turn in orange and red ones, but *you should try to solve them for yourselves, as exercises.*

Graded

Important

Routine

Groups for this homework: same as Homework 1,

- (1) Ahmed Alenezi, Rod Jafari, Yiting Song
- (2) Athbi Aljadi, Baraka Kombe-Jarvis, Elliot Spears
- (3) Alexa Graffeo, Nathan Lowe, Alexander Straiting
- (4) Tristan Hanna, Michelle Macleannan, Jade Vanausdall
- (5) Aaron Hong, Aaron Mutchler, John Vander Dussen
- (6) Brady Itkin, Bryan Nelson, Yi Xu

Problems:

- Section 1.4: 4¹, 13b, 6ab, 8ab, 9, 10, 12a-d (just prove Theorem 1.15), 1dj, 3b
- Section 1.5: 14ab, 28ac, 9abc, 15abc, 19, 26, 29acd, 2b,e
- Section 2.1: 1f, 5, 8ab, 2b
- Section 2.2: 12, 7b, 11acd, 2d, 4b

¹This problem shows that the transposition map $T : M_{m,n}(\mathbb{R}) \rightarrow M_{n,m}(\mathbb{R})$, given by $A \mapsto A^T$, is injective. It is, in fact, bijective by Theorem 1.13 (1).