MATH 307: Group Homework 6

Group 8
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Problem 1

See HW instruction.

Problem 2

See HW instruction.

Problem 3

See HW instruction.

Known that $M_{ij}^* = \overline{M_{ji}}$, we have:

$$LHS = (AB)_{ij}^* = \overline{(AB)_{ji}} = \sum_k^n \overline{A_{jk}B_{ki}}$$

$$RHS = (B^*A^*)_{ij} = \sum_k^n B_{ik}^* A_{kj}^* = \sum_k^n \overline{B_{ki}A_{jk}}$$

$$\implies (AB)_{ij}^* = (B^*A^*)_{ij}$$

Problem 4

See HW instruction.

Problem 5

See HW instruction.