

# Quiz #4

Please print your name:

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**Problem 1.** Consider the matrices

$$A = \begin{bmatrix} 1 & 2 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}, \quad B = \begin{bmatrix} 0 & 3 \\ -1 & 2 \end{bmatrix}.$$

- (a) Calculate  $AB$ .
- (b) Calculate  $A^T A$ .

**Problem 2. (Bonus!)** For a small bonus, come up with two matrices  $A$  and  $B$  such that  $AB = 0$  but neither  $A$  nor  $B$  is a zero matrix.