

Exercise 3

Let $A = \begin{pmatrix} 1 & 0 \\ 1 & 1 \end{pmatrix}$, $B = \begin{pmatrix} 1 & -1 \\ 0 & 1 \end{pmatrix}$, and $C = \begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$.

1. What is $A + B$?
2. What is $\frac{1}{2}(A + B + C)$? How can you describe this matrix?
3. What is B' ?
4. What is AB' ? What is $B'A$? What can you say about the relationship between A and B' ?
5. What is $(AB)'$, the transpose of AB ? Verify that this is equivalent to $B'A'$.