

## Problem 3 (due Monday, October 11)

A student in a linear algebra class looks at her homework problem. It says: Prove that the product  $BA$  is the same for any  $3 \times 2$  matrix  $A$  and  $2 \times 3$  matrix  $B$  such that

$$[AB = \begin{bmatrix} 3 & -1 & 0 \\ 3 & -1 & 0 \\ -1 & 1 & \end{bmatrix}.$$

Unfortunately, the entry in the lower right corner of  $AB$  is missing. Find the missing entry and solve the homework problem.

The problem was solved by Ashton Keith, Maxwell T Meyers, and Pluto Wang. Our solution provides a good illustration how to use some basic tools from linear algebra. The submitted solutions are more ad hoc. For details see the following link [Solution](#).

From:

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