Chapter 3 - Section 2

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Contents

Exercises

B

Ex. 2

($\rightarrow$) Trivial.

($\leftarrow$) Consider

$$v_i = \begin{bmatrix} 0 \\ \vdots \\ 1 \\ \vdots \\ 0 \end{bmatrix}$$

Where only ith position is 1. Then

$$\begin{aligned} (Av_i)[Col\ i] &= (Bv_i)[Col\ i] \quad \text{By hypothesis} \\ &= A[Col\ i] \quad \text{Multiplication by 1} \end{aligned}$$

Then it follows $A[Col\ i] = B[Col\ i]$ for all i.