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12. Summary

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Summarize

Big Picture

1. We come across expressions of the form "**a number times x plus a number times y** " frequently in science and engineering.
2. These expressions can be converted into **the language of matrices**, which makes the toolkit of matrix algebra available to help solve the problem.
3. Some familiar examples include **rotating a vector**, and **change of coordinates**.

Mechanics

1. We say the **product of two matrices A, B** is the matrix **AB** whose entry in row **i** and column **j** is the **dot product of the i th row of A with the j th column of B** .
2. For the dot product to make sense, **we require the number of columns of A to equal the number of rows of B** .
3. Viewing an **n** -dimensional vector as a matrix with **n** rows and 1 column, this description also applies to a **matrix*vector product**.

Ask Yourself

➤ Where does matrix multiplication come from?

Show

➤ Does matrix multiplication obey the familiar rules of number multiplication?

Show

12. Summary

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It should be "we require the number of ****columns**** of A to equal the number of ****rows**** of B."

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1 min + 3 activities

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