Vector-Matrix Multiplication

Today's Standard

HSN.VM.C11 - (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.

Cues	Notes
What is matrix-vector multiplication?	Matrix-vector multiplication involves multiplying a vector by a matrix to produce another vector.
Why is matrix multiplication not commutative?	Matrix multiplication is not commutative; $AB \neq BA$ in most cases due to the dimensions and order of matrices.
How do matrices transform vectors?	Matrices can transform vectors by changing their direction and magnitude, which is useful in fields like computer graphics and physics.
What are common misconceptions about matrix multiplication?	Common misconceptions include thinking that matrix multiplication is commutative and that the product of two vectors is another vector without considering the matrix context.

Summary

Matrix-vector multiplication is a crucial concept in mathematics, allowing vectors to be transformed by matrices. Understanding this process involves recognizing that matrix multiplication is not commutative and that vectors can be transformed in various ways by matrices.