Scalar Multiplication of Matrices

Today's Standard

HSN.VM.C7 - (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.

Cues	Notes
What is scalar multiplication?	Scalar multiplication involves multiplying each element of a matrix by a scalar.
How does scalar multiplication affect a matrix?	Each element in the matrix is affected, not just one.
Does scalar multiplication change matrix dimensions?	The dimensions of the matrix remain unchanged.
Examples of scalar multiplication	Examples include doubling payoffs in a game or scaling pixel values in images.
Common misconceptions	Misconception: Only one element is multiplied. Correction: All elements are multiplied. Misconception: Dimensions change. Correction: Dimensions remain the same.

Summary

Scalar multiplication involves multiplying every element of a matrix by a scalar, without changing the matrix's dimensions. This concept is foundational for more advanced matrix operations.