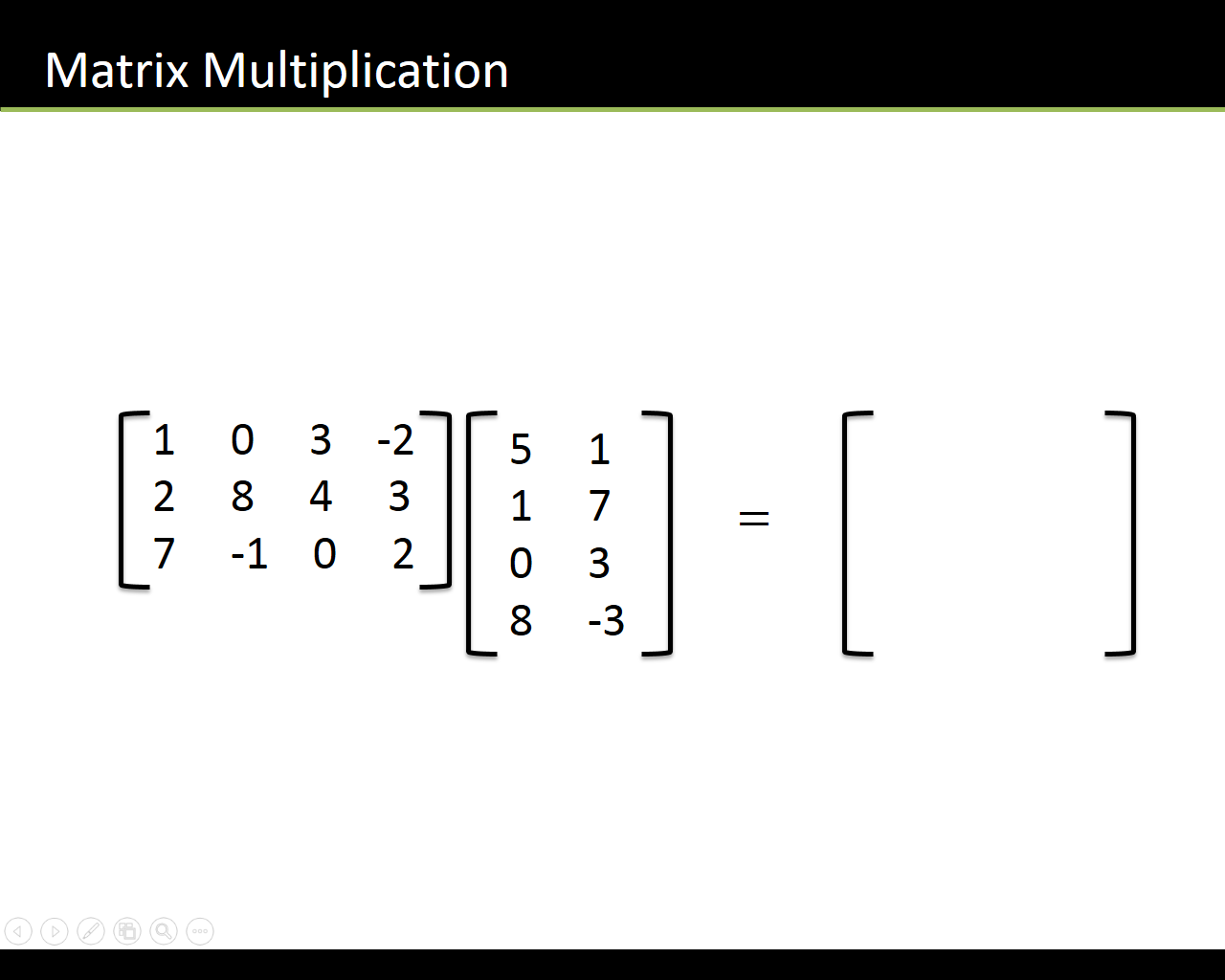
1. Matrix Multiplication

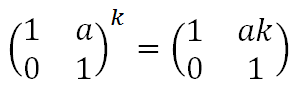
Examples

1. =



Matrix Multiplication Involving I:

Test Your Understanding



Matrices Grid Activity

When is Matrix Multiplication Valid?

Matrix multiplications are not always valid: the dimensions have to agree.

* For two matrices A and B, the matrix multiplication AB is valid provided A has the same number of columns as B has rows.
* If we multiply an n x m matrix by an m x k matrix we generate an n x k matrix.
* Note that only **square matrices** (i.e. same width as height) can be raised to a power.

Properties of Matrix Operations

Ex 6B pg 101

**Properties of Addition**

The basic properties of addition for real numbers also hold true for matrices.

Let A, B and C be m x n matrices

A + B  =  B + A    commutative

A + (B + C)  =  (A + B) + C    associative

**Properties of Multiplication**

Let A, B and C be matrices of dimensions such that the following are defined.  Then

A(BC)  =  (AB)C                 associative

A(B + C)  =  AB + AC        distributive

(A + B)C  =  AC + BC        distributive

But AB =/= BA non - commutative