Vectors, Matrices

# Matrix multiplication

## Multiply 1: Calculate A\*B

Calculate

Solution:

## Multiply 2: Calculate A\*B and B\*A

Solution:

## Multiply 3: find 2x2 matrix J with real elements such that

# Determinant

## Determinant 1: Calculate

Solution: 16

## Determinant 2: Calculate

Solution: -15

## Determinant 3: Calculate

## Determinant 4: Calculate

# Inverse matrix

## Inverse matrix 1: Calculate whole

I. Easiest value is

II. Can calculate

III. Can calculate

IV. Hardest value is

Solution:

## Inverse matrix 2: Calculate whole and calculate determine of and

I. Calculate from matrix multiplication:

II. Calculate from matrix multiplication:

III. Calculate from matrix multiplication:

Solution:

## Inverse matrix 3: Calculate (H.W.)

!!No inverse matrix because:

Try calculating anyways

Cannot because:

and

# Eigenvalues

## Eigenvalues 1: Calculate eigenvalues of (H.W.)

I. Write characteristic equation:

II. Write determine:

III. Equation

IV. Eigenvalues:

## Eigenvalues 2: Calculate eigenvalues of (H.W.)

I. Write characteristic equation:

II. Write determine:

III. Equation

<https://www.youtube.com/watch?v=4XytYH35AP0>

60=>+- 1,2,3,4,5,6,12,15,….

1=> 1

1 -13 +52 -60

2 -22 60

1 -11 30 00

(we can avoid third order but we have to multiply by )

IV. Eigenvalues: