

WEEK 2





CHAPTER ZERO REVISION

- Coordinate
- Vector and Scalar
- **Matrices**



MATRICES

- Definition and properties of matrices
- Determinants
- Special types of matrices
- Solving the system of equation



DEFINITION



ORDER OF MATRIX



REPRESENTATION OF MATRIX

- Row Matrix and Column Matrix
- Zero Matrix
- Square matrix
- Square matrix: diagonal matrix
- Scalar Matrix
- Identity Matrix or Unit matrix
- Equal Matrix
- Negative of a Matrix



ROW MATRIX AND COLUMN MATRIX



ZERO



SQUARE MATRIX



SQUARE MATRIX: DIAGONAL MATRIX



SCALAR MATRIX



IDENTITY MATRIX OR UNIT MATRIX



EQUAL MATRIX



NEGATIVE OF A MATRIX



OPERATIONS ON MATRICES

- Multiplication of a Matrix by a Scalar
- Addition and subtraction of Matrices
- Product of Matrices



MULTIPLICATION OF A MATRIX BY A SCALAR



ADDITION AND SUBTRACTION OF MATRICES



PRODUCT OF MATRICES



EXAMPLE



REMARK



DETERMINANTS

- Definition
- Minor and Cofactor of Element
- Properties of the Determinant



DEFINITION



MINOR AND COFACTOR OF ELEMENT



PROPERTIES OF THE DETERMINANT (TOTAL 9)



1.



2.



3.



4.



5.



6.



7.



8.



9.



TYPES OF SPECIAL MATRICES

- Transpose
- Symmetric
- Skew
- Singular and Non-singular Matrices
- Adjoint of a Matrix
- Inverse



TRANSPOSE



SYMMETRIC



SKEW



SINGULAR AND NON-SINGULAR MATRICES



ADJOINT OF A MATRIX



INVERSE



EXAMPLE 1



EXAMPLE 2



CRAMER'S RULE (SOLVING SYSTEM OF EQUATIONS)



CRAMER'S RULE CONTINUES



EXAMPLE



GAUSSIAN ELIMINATION 2X2 EXAMPLE 1



GAUSSIAN ELIMINATION 2X2 EXAMPLE 2



GAUSSIAN ELIMINATION 3X3 EXAMPLE 1