**DAILY ASSESSMENT FORMAT**

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| **Github Repository:** | **Kavya\_ECE040** |  |  |

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| **FORENOON SESSION DETAILS** |
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| Scalars, Vectors and Matrices  A vector is a list of numbers (can be in a row or column), A matrix is an array of  numbers (one or more rows, one or more columns).  vector in matrix algebra  It can be said that the matrix algebra notation is shorthand for the corresponding  scalar longhand. Vectors. A vector is a column of numbers. {\bf a} = \left [  \begin{array}{c} a\_1 \\ a\_2 \\ \v dots \\ a\_p \end{array} \right] The scalars a\_i are  the elements of vector {\bf a}.  Row Matrix and example  In an m × n matrix, if m = 1, the matrix is said to be a row matrix. Definition of Row  Matrix: If a matrix has only one row then it is called row matrix. Examples of row  matrix: ... [13025] is a row matrix.  Elements of Matrix:  The numbers, symbols, or expressions in the matrix are called its entries or  its elements. The horizontal and vertical lines of entries in a matrix are called rows  and columns, respectively.  So as long as we stick to matrices of the same size, we do in fact have a vector spaces. So, the long and short of it is that vectors can be matrices and matrices can be vectors. Now, Matrices are vectors – from the vector space of matrices - but not all vectors are matrices.  Scalars, Vectors and Matrices A vector is a list of numbers (can be in a row or column), A matrix is an array of numbers (one or more rows, one or more columns).  The father of matrices:  Arthur Cayley (1821-1895), English mathematician and lawyer, who first published  an abstract definition of a matrix in his Memoir on the Theory of Matrices in 1858,  thus, establishing it as a branch of mathematics. So, this man was the father of  matrix.  Vectors are a type of matrix having only one column or one row. A vector having  only one column is called a column vector, and a vector having only one row is  called a row vector. For example, matrix a is a column vector, and matrix a&#39; is a row vector. A matrix is a collection of numbers arranged into a fixed number of rows and columns. Usually the numbers are real numbers. In general, matrices can contain complex numbers but we won&#39;t see those here. Here is an example of a matrix with three rows and three columns: The top row is row 1.  The series primarily consists of a trilogy of science fiction action films beginning  with The Matrix (1999) and continuing with two sequels, The Matrix  Reloaded and The Matrix Revolutions (both in 2003), all written and directed by the  Wachowskis and produced by Joel Silver.  Main point of the Matrix  The Matrix trilogy suggests that everyone has the individual responsibility to make  the choice between the real world and an artificial world. Though Neo is the  exemplar of free will, fate plays a large role in his adventure. Neo relies on the  Oracle, and everything she says comes true in some way.  Application of Matrices  Almost every branch of physics, including classical mechanics, optics,  electromagnetism, quantum mechanics, and quantum electrodynamics, matrices are used to study physical phenomena, such as the  motion of rigid bodies.  Matrices have also come to have important applications in computer graphics,  where they have been used to represent rotations and other transformations of  images. is a 2 × 3 matrix. A matrix with n rows and n columns is called a  square matrix of order n Matrices are classified according to the number of rows and columns, and the specific elements therein.   1. Row Matrix: A matrix which has exactly one row is called a row matrix. The above two matrices are row matrices because each has only one row.   Matrices are a useful way to represent, manipulate and study linear maps between  finite dimensional vector spaces (if you have chosen basis). Matrices can also  represent quadratic forms (it&#39;s useful, for example, in analysis to study  hessian matrices, which help us to study the behavior of critical points). |