**TI Calculator Worksheet**

**Grade 11**

**Subject:**  Solving System of Linear Equations by Using Matrices

**Necessary Equipments:** TI-84 Plus Calculator, Computer, Excel Programming

**Time Required:** 60 minutes

**Note:** Remember! In TI-84 Plus Calculator, minus and negative signs(-) are different from each other. If you press the minus button instead of the negative sign you will get syntax error.

**Objectives:**

* İD. 11.3.2.2.İkinci dereceden iki bilinmeyenli denklem sistemlerinin çözüm kümesini cebir ve grafik yardımıyla bulur.

***History of Matrices***

* The beginnings of matrices and determinants goes back to the second century BC although traces can be seen back to the fourth century BC.
* It is not surprising that the beginnings of matrices and determinants should arise through the study of systems of linear equations. The Babylonians studied problems which lead to simultaneous linear equations and some of these are preserved in clay tablets which survive. For example a tablet dating from around 300 BC contains the following problem:
	+ *There are two fields whose total area is*1800*square yards. One produces grain at the rate of*2/3*of a bushel per square yard while the other produces grain at the rate of*1/2*a bushel per square yard. If the total yield is*1100*bushels, what is the size of each field.*

***Matrix***

 A way of representing data in a rectangular array. An *m*×*n* matrix has *m* rows and *n* columns, and each entry is given a unique name, based on its row and column: The matrix *A* is often denoted [*A*]

A=

#### *Activity 1: Find the determinant of a square matrix by using TI calculator.*

#### 1. Press ALPHA [F3] to display the quick matrix editor. The default size of the matrix is two rows by two columns. But you can choose any dimensional matrix.

####  2. Press ENTER.

#### 3. For example write a 2 by 2 matrix which is . So press 3 2 43 to create the matrix.

#### Note: To input a fraction in a matrix, delete the pre-populated zero first.

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#### 4. To find the determinant of the matrix given; Press To display the MATRX MATH menu, press 2nd MATRIX . Choose 1: det ( and press ENTER.

#### 5. Press ALPHA [F3] to display the matrix . Then, press ENTER.