Advanced Linear Algebra Quiz 3

Don't forget to write down clearly your **Name**:   and **Net ID:**

1. True or False (5 points)   Mark "T" (True) or "F" (False) in front of each statement.

____   The inverse of an elementary matrix is also elementary.

____ $\det(-A) = -\det(A)$.

____   Any square matrix is a finite product of elementary matrices.

____   If A is an invertible matrix, then the system of linear equations $Ax = b$ has a unique solution.

____   The determinant $\det : M_n(\mathbb{F}) \longrightarrow \mathbb{F}$ is linear map in each column.

2. Determinant computation (5 points).   Compute the determinant of the following matrix

$$A = \begin{pmatrix} 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 12 \\ 13 & 14 & 15 & 16 \end{pmatrix}.$$