MATH 335 Quiz 5 Name: .

Show all work. 5 points each.

1.Find the inverse of the matrix $\begin{bmatrix} 8 & 6 \\ 5 & 4 \end{bmatrix}$ and **USE IT** to solve the system of equations

$$8x_1 + 6x_2 = 2$$
$$5x_1 + 4x_2 = -1.$$

2. True/False don't need to justify. **All matrices are $n \times n$ for this exercise**.

a) If the equation $A\mathbf{x} = \mathbf{b}$ has more than one solution for at least one $\mathbf{b} \in \mathbb{R}^n$, then the matrix A is invertible.

b) If A^T is not invertible, then A is not invertible.

c) If matrices E and F have the property that $EF = I$, then $EF = FE$.

d) If K is an invertible matrix then, $AK = KA$ for all other $n \times n$ matrices A.

e) If A and B are invertible AB is invertible and the inverse is $A^{-1}B^{-1}$.