1. Given matrix A as the product of the following 3 matries, what is the value of A_{32} ?

$$A=\begin{bmatrix}3 & 0 & 0\\ 0 & -2 & 0\\ 0 & 0 & -5\end{bmatrix}\begin{bmatrix}1 & 2 & 3\\ 4 & 5 & 6\\ 7 & 8 & 9\end{bmatrix}\begin{bmatrix}-2 & 0 & 0\\ 0 & -3 & 0\\ 0 & 0 & -4\end{bmatrix}$$

(a)120 (b)36 (c) 32 (d)none of the above

2. 2f A is an invertible lower triangular matrix ,then $(A^T)^{-1}$ is which of the following matrices.
   (a)Diagonal (b)lower triangular (c)upper triangular (d)sysmetric

3. if A^{-1} is the product of the following 3 matrices,

$$\begin{bmatrix}1 & 0 & 0\\ -2 & 1 & 0\\ 0 & 0 & 1\end{bmatrix}\begin{bmatrix}1 & 0 & 0\\ 0 & 1 & 0\\ 0 & 3 & 1\end{bmatrix}\begin{bmatrix}1/2 & 0 & 0\\ 0 & 2 & 0\\ 0 & 0 & 3\end{bmatrix}$$

What is the value of the A_{31} ?

(a) 1 (b) 2 (c)-1 (d) -2

4.If A is an invertible matrix ,which one of the following is false ?

(a)A is a square matrix
(b)Ax=b has exactly one solution
(c) A^T is also invertible
(d)Ax=0 has nontrivial solutions.